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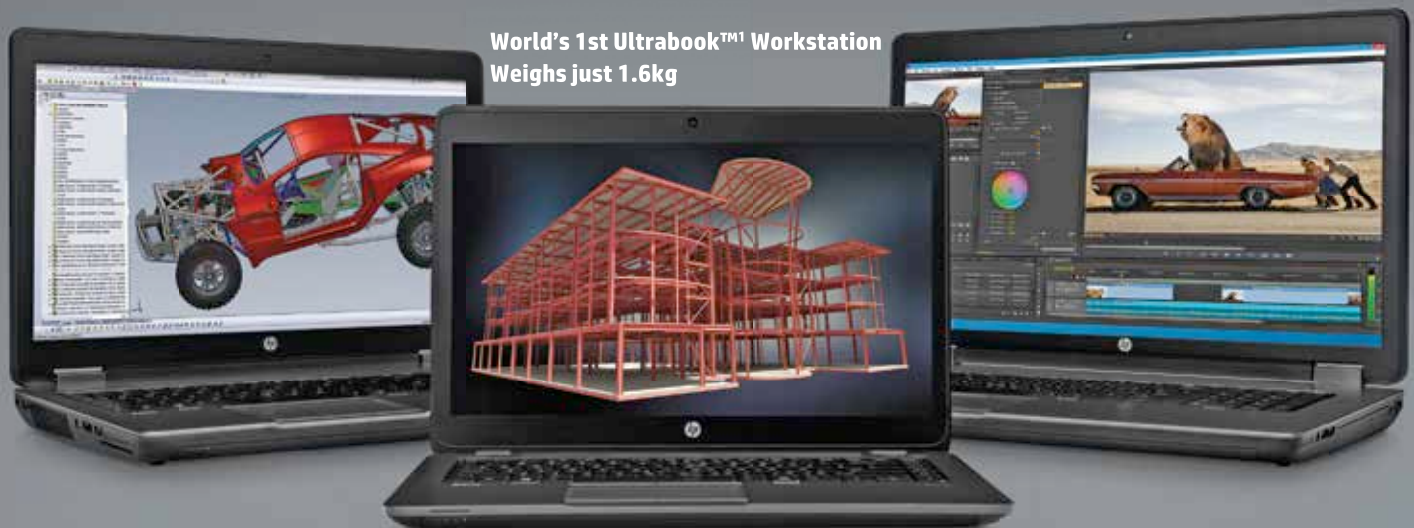
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The specifications arms race

Cisco predicts some 25 billion devices will be connected to the Internet by 2015. The number already crossed the Earth's population a long time ago! And so in an era when toasters and toilet seats have started tweeting, perhaps it's a good time to introspect and take stock of what technology means to each one of us.

To me, technology is a means to an end and not the end in itself. Let me give you a few examples to qualify my statement. Believe it or not, I continue to stand resolutely outside the iPad's Borg-like reach and don't own one till date. I just don't find any use for it. I'm saying this after keeping the office iPad with me for a whole month and realising that it's been gathering dust over the duration of its sojourn. The reason is I don't play casual games and all my long-form reading still happens on the PC. I read books on my Kindle Paperwhite and for everything else there's my Nexus 5. I don't care much for the iPad's high pixel density display (yes, I refuse to say Retina) because after all, it's just a display. While the content on it might look a little better, it's not going to show me anything new just because it's a better display. Use the right tools for the right job, is my belief. If you move around and want to read on a larger display, and merely consume data on a device with great battery life, sure the iPad makes sense for you – for you – being the operative word.

Peculiarities like this exist with all sorts of technology.

Look at cameras. It's easy to get sucked into the specs-race here as well. You may have all the knowledge in the world about f-numbers, HDR, spot metering and such, but if you can't compose a good shot with your high end DSLR what use is it all? A camera is just a tool we use to capture a photograph, thus the photograph is important, not so much the camera.

Don't get me wrong, there's nothing wrong with owning nice things. If you have the money sure you can go ahead and buy only top-of-the-line products. But I have a problem if a) you're selling your kidney for high end equipment b) you think you're in a different league altogether once you own that high end piece of technology c) if you think your skill – be it photography, gaming, whatever – is going to improve automatically as a result of the boost in specifications and d) if you're going to delude yourself into believing that the product you've bought is better than everyone else's just because it says so on the box.

Think about it. Will money spent on high-end headphones and amplifiers give you a greater understanding of or appreciation for music if you are someone who doesn't really listen to music all that much? Good audio technology is best enjoyed by those who really like listening to, umm, music.

Even when it comes to the beloved PC, there are some oddities which I haven't been able to fully wrap my head around. Overclocking for the sake of overclocking, for example. Sure, if you're using some really cool set-ups, LN2 et al, and going for records, I can understand. But why would you overclock a system that doesn't need to be OC'ed, i.e it's running all the latest games just fine? If you're OC'ing an older CPU today to eke out that very last bit of performance from it for that five frames per second boost, that's an effort I'd applaud. In fact that's something many of us have done at some point or the other. But today, you have OC product lines from motherboard and GPU manufactures – products designed to be overclocked from the word go, not as a contingency – something I don't quite get considering the premiums they demand. I can't believe that all of those hundreds of thousands of people buying these OC products are doing it for the records out of the box.

This month, Digit built what we believe is India's fastest PC. It's okay for Digit to try and build such a monstrous PC, because quite frankly, WE CAN, and we're indeed a little crazy. If you're mortgaging your house just to show-off your ultra fast PC, I'd seriously question your sanity. The first thing I said when our monster PC was built was "let's play something on it and see how different it looks and how much better the performance is," because after all, a good PC is only as good as the games you can play on it, right? As it turns out, there really aren't any games that can truly stress this dream machine of ours. Ah well, at least there's no better future-proofed PC around.

Point is, it's easy to get so caught up in the pursuit of technological superiority, in the pursuit of what technology promises, that we sometimes forget technology is only a means to an end, not the end in itself.



Siddharth Parwatay
Assistant Editor

siddharth.parwatay@thinkdigit.com

"There's nothing wrong with owning nice things. If you have the money sure you can go ahead and buy only top-of-the-line products"

A handwritten signature in black ink, appearing to read 'Siddharth Parwatay'.

Got feedback about this column?
Drop me a line at:
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SteelSeries Stratus – Gaming Controller

SteelSeries Stratus is a wired and wireless gaming controller, available in both black and white. It's a full-sized controller with a standard layout, but with some unique features. The Stratus is designed for comfort and precision, with a textured grip and a variety of buttons and triggers. It's a great choice for gamers who want a high-quality controller that's also easy on the eye.

Droolworthy accessories that add extra oomph to your iPhone

After buying a smartphone, there are some things, some companion accessories and items that are essential to better utilize your smartphone's features or safeguard its integrity. Here we list out some of the basic essential devices you need to ensure that your smartphone is protected to the maximum. And after owning these gurus, you can be rest assured that your smartphone won't just be a smartphone anymore.

SnappGrip – Camera and Photography

It all started with a passion for photography. The SnappGrip is a camera that's designed to be used with your smartphone. It's a great way to take better photos and videos with your phone. The SnappGrip has a variety of features, including a built-in camera, a flash, and a variety of filters. It's a great choice for anyone who wants to take better photos with their phone.

Mophie iPhone Space Pack

If you have an iPhone, you must have a Mophie Space Pack. It's a great way to keep your iPhone charged and protected. The Space Pack has a built-in battery, a camera, and a variety of other features. It's a great choice for anyone who wants to keep their iPhone in good shape.

Case+

Case+ is a great way to protect your iPhone. It's a clear, protective case that's designed to be used with your iPhone. It's a great choice for anyone who wants to keep their iPhone safe from scratches and other damage.

Moment – Lens

Moment is a great way to take better photos with your iPhone. It's a lens that's designed to be used with your iPhone. It's a great choice for anyone who wants to take better photos with their phone.

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The unsocial internet of things

Unsocial networking

Siddharth found out, for his column, that the number of internet connected devices surpassed our global population years ago, and of course went unnoticed. When discussing that fact, all of us felt it as totally logical. Of course we have more devices than people, because the amount of devices one connected individual uses is a lot more than one.

Let's take my own home as an example to calculate the amount of net-connected devices I have: A laptop (no wait two laptops, but one of them we rarely use), three phones, an iPad, iPod touch, Nexus 7, Wii, PS3, two routers, a net-connected baby monitor, a NAS drive, Tata Sky+ box, a net-connected amplifier... that's at least 16 devices shared between a couple and a baby. We also have devices that exist to connect us at work as well, though usually just a PC or laptop...

The fact that most of these can talk to each other over the net or my routers makes the Internet of things seem almost obvious. In fact if I ever succumb to the temptations to buy even more gadgets – smart TVs and refrigerators that tweet when I'm low on milk, etc., this number will only go up. And I'm not even counting my son's tech-enabled toys that will no doubt be added to the mix in the future.

So will the internet of things soon just be the internet of everything; sort of like it is in the upcoming game Watch Dogs?

Probably not.

Just as you don't have too many people on your friend list whose Facebook profile is filled out in Mandarin, or German, etc., assuming that all devices will just be able to talk to one another is a little far fetched right now. And we're not going to fix that anytime soon unless we just run absolutely everything on a single platform – as they've described in Watch Dogs as CTOS (CenTral OS).


Let's assume we live in utopia where all the "big guys" would cease to care about their stockholders for long enough to give a damn about the rest of the world, and come together to (gasp) share information and build devices based on pre-decided standards. Basically, we'd have a conglomerate called MegaCorp (or something less Hollywood-ish) that sold us everything tech-based. Even then, there will always be people like me who don't throw away

their perfectly working router just because it's not 802.11n, and keep both N and G networks running in the house. Backwards compatibility is desirable, after all.

The laptop I don't use... it runs Windows XP, which isn't supported anymore. I only use it sparingly, and have actually turned it on and let my son bang away at the keyboard as he imitates me writing an article... Fact is, it's a legacy device, connecting to the Internet, talking to other devices, and is a security hole.

I have no doubt that we are far from being able to write perfect software that has no security holes. Hackers will forever test and retest our code to try and find flaws, and we will forever be patching the holes they discover. It's also obvious that older code that's not being supported will have more holes potentially. Though it might even out as less hackers will be focussing on dead software, and more interested in newer, more popular code to exploit. Still, if you come back to the example of my house, I suppose the weak link is the laptop with XP, or maybe the older D-Link router that I haven't bothered to firmware upgrade for ages, or the PS3, or maybe even the Denon AMP that's so niche that I probably wouldn't even know if there was an exploit available for it.

This is the chink in the armour of the internet of everything. We may be willing to upgrade our phones every two years, or even sooner, but we will not allow that for other devices. Would you rather upgrade your router just because it cannot offer some new but unnecessary feature, or keep it because it still works perfectly?

Apart from a few product categories, we've reached a point where we're content for a lot longer with what we have. This means more legacy devices and as a result, which may equal a less secure internet of things, but more importantly, means an ever increasing list of devices that can talk to a few others but not every other device. Not exactly the most social of networks...



Robert Sovereign-Smith
Executive Editor
robert@thinkdigit.com

"So will the internet of things soon just be the internet of everything; sort of like it is in the upcoming game Watch Dogs? Probably not."

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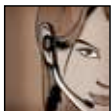
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Buzz

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Researchers create TGCN, a new material that improves transistors used in electronic devices.
<http://dgit.in/1ovvQ3j>

✉ Dear Editor,

This is my first time writing to Digit. I'm a fairly new subscriber to the magazine. April would have been my second copy so far and I must say I'm pretty impressed with what Digit as a magazine has to offer. It's packed with amazing content that can keep you entertained and informed until the next monthly edition is out.

The articles throughout the magazines are very comprehensive, and I really appreciate the snippets with the tiny links that are posted on the top of the pages. The URLs may be small but the information they lead you to is anything but small. However, it's a pain to type in the links letter by letter, as they don't follow much of an order neither do they make complete sense (as a normal URL would). I understand that the actual URL has been condensed and that's how we get those type of links.

My suggestion here would be to use QR codes that save space and are highly efficient. In today's day and age, mobiles and tabs are, needless to say, the next PCs and laptops and I can foresee them taking over the personal computer in the very near future. So it only makes sense to convert those links to QR codes that users can scan and then follow the resulting link to the website. I personally feel this would make life a little easier, but I'd like to know what you think.

So far, Digit has been taking up most of my free time, and now that I take it to office most of my colleagues have or are in the process of becoming yearly subscribers of the magazine.

Great job guys! Can hardly wait for the May edition to come out.

—Aaron Mendonsa

■ We do bunch together URLs of all World View articles into a scannable QR code, if you've noticed. We just don't do QR codes for snippets to draw people's attention to it through catchy images and headline, as opposed to QR codes on all pages. Maybe we should put all snippets into one QR code bundle at the end of the magazine. That should do it. Thanks for your regards and support. Always good to hear from our readers, and thanks for spreading the word.

—Jayesh

Feedback for the May 2014 issue of Digit



✉ Hi!

I've been reading your awesome magazine since the past 4-5 years, but not regularly since I live in a very small city. We don't even have a good bookstore to read regular magazines and novels (I'm a novel addict too). I only get the opportunity to read this mag whenever my father goes to a big city.

Whenever I read it, I find it awesome. Everything, especially the articles and CDs, is fantastic. I have read C++ in my +2 and loved it, and the credit goes to you guys. I have a request. In May 2014 issue, the CDs contained information regarding app development for Nokia X and Moto X. I'm interested in the topic, but I don't even know its ABCD. If you can give its information in any Fast Track or as PDF in any CD, then it would be really cool. Also, please include information about products suitable for the middle class.

Your reviews are very helpful, and 'Digit Diary' is really fantastic. I have a message for Siddharth: Your beard look is very good, sir.

By readings others' letters, I got to know that normally you don't reply to the first letters, but who knows may be this time I may get lucky. Last, but not the least, your t-shirt idea is fantabulous. Keep up the good work.

—Chaitanya Dhar Dwivedi aka CD

■ Thanks for taking all the trouble to read our magazine, Chaitanya. To hear the lengths that our readers (like you) go to read Digit is a motivating factor for the entire team. Your request has been forwarded to Anirudh (who handles the DVD content every month), and thanks for upvoting my beard. It has grown on me as well – no pun intended. Hope you enjoy this month's issue, and happy reading.

—Siddharth

✉ Dear Team Digit,

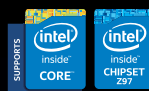
I really appreciate your magazine content and can't miss even a single edition of it. Even after migrating to the US, I follow your magazine on my iPad every month. The main reason for composing this email is that very recently I got out of a huge mess because of you guys.

Last week, my laptop got damaged very badly from a fall, which would have proven fatal for a Drop test. The content in it is very important to me because I'm an MIS student and I also have a part-time job in the IT lab that requires me to store all documents on the laptop. Fortunately, I had previously read an article about storing my data, including the folders on the desktop, on Google Drive. This proved very helpful as I have all the needed documents online and it saved me from a lot of trouble. I would, of course, remain a loyal reader of

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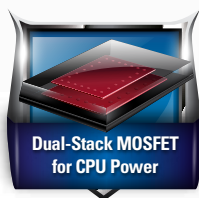
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Lenovo overtakes Apple

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LETTER OF THE MONTH

✉ Happy 13th Anniversary. This is my first letter to you. I've been reading your magazine for about 6 years now and I really love it. You guys are incredible. How do you have an email ID like @thinkdigit.com? Also, how come you guys know about yet-to-be released technology, e.g. iPhone6? The only downside in the magazine is that the games you provide are a bit, you know, bad. Why don't you guys give game posters? And the Steam games can be downloaded by anyone. Why give them on the CD? Also, can you please provide a review on Call Of Duty: Advanced Warfare? Also, I was thinking, why don't you hide Steam keys in your mag (like the Word Jumble) or maybe put one in some random copy? Anyway, you guys rock.



Have a blast!

—Feedbackone (Steam username)

What do you mean by how do we have email ids with the thinkdigit.com domain? You DO know that any website can have an email id right? For example if you own www.iamanoob.com you can have an id such as feedbackone@iamanoob.com. As for the Steam games well we've done that once or twice with extremely popular games because not everyone (even today) is privileged enough to have a high speed unlimited connection. Also your wish is our command. We've hidden a key or two in the magazine.

Get to them before anyone else does. You get a t-shirt for wishing us before anyone else did. Cheers!

—Siddharth

Digit and hope to see a lot more of such cool and useful stuff to read in the future.

—Sasikanth Jasti (Montgomery, Alabama)

You'd be surprised to know, Sasikanth, that almost everyone in our team works fully on cloud apps (Google Drive, OneDrive, Dropbox, etc.) and sensitive, work-related data is always shared, never kept on a single, vulnerable end point. Glad to hear that we could save you on a rainy day.

—Anirudh

✉ Hello guys!

Do you know what 'kidu' means? It's a Malayalam word for 'superb'. That's right. This magazine is kidu!

I know I'm not professional, but here are some of my suggestions.

- Why don't you dedicate a page to Internet memes such as Grumpy Cat?
- How about giving some games or graphics card as gifts to people who give you advice? (Just kidding)
- Why don't you guys include a game poster in the package?
- Change the magazine's language a little bit. Don't hesitate to write in a

funny way like "Ohhh, this device is so @#!*ing good."

- And another thing. Why the heck are we the only people from a developing country to experience such low Internet speed? Why can't we be like the US or UK with 15Mbps-20Mbps connection at low prices? We have to pay ₹1,000 for a 2Mbps connection. And what is the Government doing? Why are they supporting such low speeds? Why can't they increase the base speed from 256Kbps to some 5Mbps? It really hurts when you see the American YouTube videos with fast Internet.

If you're planning to give me a t-shirt, then my height is 5.11 ft. Keep up the good work guys. Love you all.

—Manish Kumar

Allow me to reply to your questions, one by one:

- If more people want memes, like you, then we'll definitely think about it.
- Hehe, nice try.
- One day we will. Stay tuned.
- We are always working on our writing

style, but remember: being obscene isn't the same as being cool.

- A lot of our country's bandwidth is borrowed, which is what makes it so expensive. We just have to live with it, I guess. As far as slow speeds go, they're only bound to go up. Our country has far bigger, more important problems than Internet speeds to contend with. So have some faith, and be patient.

—Robert

✉ Dearest Respected Geeks,

I hope you're all alright. This is my second letter to you.

In the approximately 2 years that I've been reading Digit, I've never found any drawbacks. The two DVDs are awesome, but I have a suggestion. One of the DVDs includes more or less the same software every month. Please change them since readers (including me) expect something new from your side. I know it must be difficult for you to find new software every month so I suggest changing the software at least every 2 months. In this way, readers and you will be satisfied, and if it doesn't work you can change this.

DGT is also super-cool. When reading Digit, it feels like the magazine is talking to me because you use such interesting language. Digit is not only a magazine – it's like an 'Ask Me Anything' guide about this tricky tech world. I'm only 16 years old, but all my neighbours take my advice before purchasing any tech item. Even at school, my teacher always takes my advice before going to the market to buy any gadget, I give the credit for this to my continuous hard work in the tech field. I want to become a hacker and Digit has been very helpful to me.

Finally, I think that my letter deserves to be chosen as the 'Letter of the Month'. I would feel honoured to receive anything from you as the prize. I'm a short geek of 5.4ft and I wish you very happy days for the future. Hats off to you guys!

—Parteek Sharma

Thanks for your suggestion on the DVDs, Parteek. We'll definitely think on it. We have a lot of fun writing DGT, too, and glad to see that you love reading it. Thanks for sharing your story. Keep reading.

—Siddharth

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The Mobile Indian, afaqs!*

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India, last month was all a-buzz, everywhere

From the election aftermath to ambitious takeovers, the nation was a hustle and bustle of activity of every kind

The kart expands

India's largest e-commerce company Flipkart has finalized the acquisition of the Bangalore-based online fashion store Myntra according to official sources at both the companies. Myntra's founder, Mukesh Bansal will join the Flipkart board and both the entities will remain independent.

According to reports, Flipkart will invest around \$100 million in the fashion business. Flipkart's co-founder

have majority shares in both the companies, have been credited with initiating the deal in the first place.

According to sources, Flipkart founders Sachin and Binny Bansal own less than 10 per cent of Flipkart while Mukesh Bansal owns around 6-7 percent in Myntra.

Delivery drone

Mumbai's Francesco Pizzeria used an unmanned aerial drone to deliver a pizza to one of its

Francesco Pizzeria, Mikhel Rajani said that the drone delivery was just a test run but it did appear to be more economical than relying on delivery boys. He revealed that the drone cost \$2,000 (about ₹1.2 lakhs) and it was modified to be able to carry the pizza. The modified drone has an effective range of 8 kms which means that it will be able to make deliveries within a radius of 4 km.

Don't expect pizza deliveries via drones to become a regular thing, though. Security restrictions prevent such drones from flying at an altitude of more than 400 feet or near sensitive locations.

In addition to that, as mentioned above, it's not really the most economical option for delivering pizza. 1.2 lakhs per drone would be – well, pushing anyone's budget.

Even if you can't witness it in person, you can watch the video of the drone delivering the pizza at <http://dgit.in/franpizzadrone>

Socially Modi-fied

Narendra Modi's popularity on social media continues to grow. According to reports, Modi's official Facebook page has the second-highest fan following for politicians, right after US president Barack Obama. Moreover, Modi's page is the fastest growing Facebook page for any politician or elected official, worldwide.

"Modi continues to have the fastest growing page (for the last day, week and month) of any politician or elected official worldwide," Andy Stone from Facebook policy communications is quoted as saying.

Modi kicked off the first phase of the general elections with 12.46 million fans on the Facebook. Soon after he was appointed by President Pranab Mukherjee as the next Prime Minister of the country, figures grew to 15.245 million fans. According to Andy Stone, Modi's page surpassed Mitt Romney, the former Republican presidential candidate during the elections phase.



Flipkart takes over Myntra

Sachin Bansal has said that "It's a 100 percent acquisition and going forward we have big plans in this segment."

As of now, financial details of the deal have not been revealed but sources from Flipkart say that the transaction was valued at close to \$300 million. The deal will surely help Flipkart in becoming a leading e-retailer in the online fashion business in India. The deal is said to be a combination of both cash and stock.

Tiger Global Management and Accel Partners, which

customers on May 11. The customer, whose apartment was in a high-rise building, lived about 1.5 kms away from the pizzeria outlet and received the pizza from the drone in less time than it would take a delivery person. As Medianama points out, this does appear to be a well-thought out and well-planned publicity event. Nonetheless, it is noteworthy, especially at a time when Amazon has also been trying out drones for package deliveries.

While speaking to the media, the chief executive of

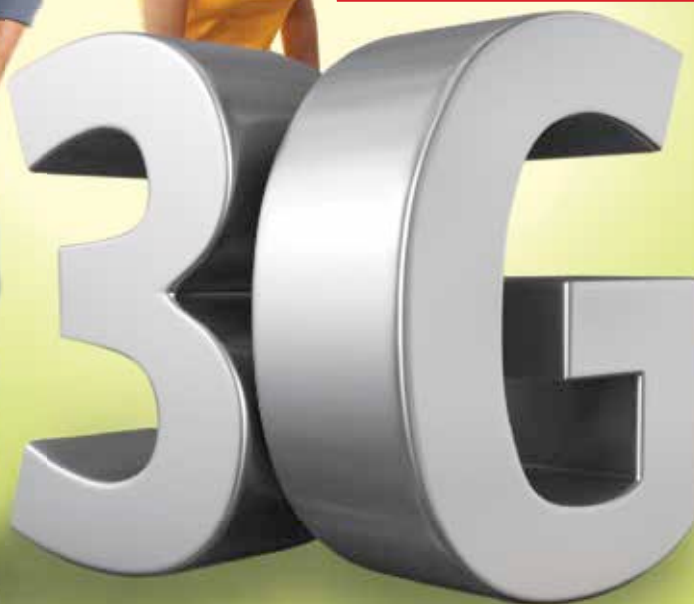
"Since elections were called on March 5th, Facebook users in India have been engaging with their friends, the candidates and political parties to discuss the 2014 Lok Sabha elections,"

~Andy Stone

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Is steam a threat

...to the PS4 and the XBOX One? It's in-home streaming feature may have repercussions for consoles <http://dgit.in/inhstrmg>



The new order

Check out this first impressions review of Wolfenstein: The New Order by Rock, Paper Shotgun <http://dgit.in/WtNOrpS>



Modi's presence on social networking websites is commendable

As the time of writing this article, Obama has 40,698,656 likes, while Modi has 15,354,062 likes on Facebook. Modi, however, has greater growth rate on Facebook (1.171 per cent) as compared to Mr Obama's 0.305 per cent. On 16th May, the day of counting, mentions of Modi grew by seven times on the social network.

The new feat comes shortly after Narendra Modi's victory tweet broke the record of most retweeted tweet ever from India. Soon after the poll results suggested at a landslide victory for his party, Modi posted on Twitter - "India has won!" - the tweet saw over 70,000 likes.

Narendra Modi has been very active on the social networking websites. This trait is something that certainly helped him connect more with youth of India and contributed a lot to building his pro-youth image in the elections.

Social networking under-13

Should children below 13 years of age be allowed to join the social networking websites? It has been one of the long debated issues globally, especially in the wake of growing

case of cyber-bullying, child pornography and trolling. In India, the government is already making efforts to prevent children under 13 years from accessing the social networking websites. However, a new study conducted by ASSOCHAM reveals about 73 percent of children under 13 years of age in India are using the social networking websites such as Facebook.

The study was conducted in metro as well as tier 2 cities of in India including Delhi-NCR, Mumbai, Bangalore, Chennai, Kolkata, Ahmadabad, Hyderabad, Pune, Lucknow and Dehradun. Survey further points out about 75 percent of the parents are aware about their children in the age group of 8-13 years using Facebook. Another shocker is about 82 per cent of parents provided the incorrect information allowing their child to create a Facebook account.

"Nearly 25 percent of 13-year-olds, 22% per cent of 11-year-olds and 15 percent of 10-year-old are on Facebook, while 5-10 percent of 8 and 9 year-olds are also active on the site." Facebook has emerged as the most preferred social networking site among this age

group. Other sites like flick.com, Google Plus, Pinterest are being used by 85 percent of children in the age group of 10-16 years," adds the survey.

Commenting on the survey findings, Mr. D.S Rawat, General Secretary of ASSOCHAM, says, "Children are gaining access to social media sites at a younger age, which could expose them to content, people or situations that are out of their depth." He points out that such a high number of children below under 13 years of age on social networking sites could lead increase in cases of cyber bullying, which could have adverse psychological impact on them.

ASSOCHAM's new survey comes months after the Delhi High Court took a serious note of children below 13 years having accounts on the social networking websites. The court asked Facebook to put a disclaimer on its home page stating that children below 13 years cannot open account on the social network. The Delhi

Super Rajnikanth?

Despite the game never being officially launched in India, many of us grew up playing Super Mario Bros. on our Little Master or Sega consoles.

One can spend hours thinking about Indianizing Mario. Give him a typical Indian name. Play the character to a stereotype (pick one of the hundreds we have here) and put it up against a backdrop of mustard fields. Maybe have him fight rakshasas and politicians. Saving the maharani and freeing the country. If Nintendo had ever realised how popular the little Italian plumber was in India, they would have perhaps created an Indian version of the gaming superstar.

Since they haven't, we'll have to be content with this amazing 'Indianized' version of Mario (or rather, 'Mukesh') created by the always funny folks over at AIB - the comedy troupe.

The video hits all the right spots when it comes to popular culture in India including a 'Rajnikanthi-fied' Mario and



73% of Indians on social networking websites are under 13

HC also gave the Indian government a rap on the knuckles for not having adequate laws to prevent children from abused through the social networking sites. We'll have to wait and see if the admonishment works.

an ending straight out of the blockbuster Hindi film Dilwale Dulhania Le Jayenge. Anyway, before I end up spoiling the entire video for you, you can watch it is in all its glory at <http://dgit.in/indimario>

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Web watch

Summer's here and well-established entities and new ventures alike are heating up the online space

Security watch

We take a look at the latest developments in the world of data and information security

Rumor has it...

The rumour mill is constantly cranking out stories about tech and gadgets. We're here to tell you that they may be true, as leaks suggest

Nokia's budget phones X2 may feature Qualcomm MSM8210 processor, XL for sale at Rs.12k

Details about Nokia's next X-series smartphone, dubbed the X2, have surfaced online. The Nokia X2 is expected to feature improved hardware specs as compared to its predecessors, X and XL.

According to a leaked benchmark result, the Nokia X2 will be powered by a Qualcomm MSM8210 processor. Moreover, the smartphone will have 1 GB of RAM and 4 GB of internal space. The Nokia X2 manages a score of 11,827 – considered to be good for a low cost handset. As per older rumours, the smartphone will feature a dedicated home button as well.

After having built a lot of buzz, Nokia's Android-based X smartphone failed to win critics, mainly because of its poor specs as well as sluggish UI and Android customisation.

That said, Nokia seems to be more focused in the specs department with the new X2. There are already speculations that the phone is set to compete against a wide range of budget Android smartphones, including the newly launched, low cost Moto E.

While speaking of the X2, its predecessor Nokia XL comes to mind, which is now up for grabs via the company's official store for Rs. 11,489. Currently, the Nokia store has a green variant listed and promises to deliver within five working days.



The Nokia XL

The Nokia XL is a dual SIM smartphone, featuring a 5-inch IPS display with 800x480 resolution and 233ppi. The XL is based on customised Android 4.1 with Fastlane and is powered by a 1GHz dual-core Qualcomm MSM8225 Snapdragon S4 processor along with 768 MB of RAM.

The XL has a 5MP rear camera with auto-focus and LED flash and 2MP front-facing camera. The smartphone comes with 4GB storage, expandable via microSD. It's powered by a 2,000mAh battery.

Google may replace Nexus line with Android Silver, teams with HTC for tablet

Rumours about Google abandoning its popular Nexus series resurfaced on the web in May. According to phone leaks expert @evleaks, Google won't be announcing a Nexus 6 at its forthcoming Google I/O event. New rumours reiterate that the Nexus will be replaced by a new project called "Android Silver" by 2015. An LG handset, run-

ning on a Qualcomm MSM8994 processor, is rumoured to be among the first Silver devices.

"There is no Nexus 6. Farewell, Nexus. Don't worry, there's a silver lining to this cloud... Android Silver, circa February 2015," said Evleaks in a series of tweets in May.

At the time of writing, there's not much information available about Google's new initiative, though a recent report in *The Information* suggests Google will be using Android Silver to expand its influence in the Android eco-system.

The report further states that Google will be subsidising the development and marketing



Silver linings?

expenses for its hardware partners. The search engine giant is reportedly spending about \$1 billion to roll out its plan. LG and Motorola are believed to be the most likely hardware partners for Google's new range of devices. Sony, HTC and Samsung are expected to join later.

Google reportedly teams up with HTC for 3rd gen Nexus tablet

In another partnership, Google will be teaming up with HTC to launch the next Nexus tablet, if a report by *DigiTimes* is to be

believed. According to the site, Taiwanese component manufacturers have received orders for 8-inch HTC devices, expected to be launched with the Google Nexus brand.

Considering that the Nexus has already helped Google boost Android in the tablet space, the company is expected to not aggressively market its third-generation Nexus. Moreover, Google is no longer keen on staying in the tablet market and the third-gen Nexus could be the last tablet from the search engine giant.

The device is expected to be showcased at Google's annual I/O Developers Conference on June 25 and June 2. Earlier rumours hinted at the unveiling of the Nexus 8 and new Android iteration v4.5 at the event.

If the report turns out to be true, HTC will replace Asus as the Nexus manufacturer. Asus had manufactured the first and second generation Nexus tablets. It's worth pointing out here that Google had first approached HTC for a joint venture on the Nexus slates. HTC, however, turned down the offer as it was focusing on its smartphone business at the time.

Moreover, Asus is now focusing on its own smartphones and tablets business. *DigiTimes* reports that Asus "has also not been as aggressive over third-generation Nexus orders since Google has placed restrictions on the partnership and Asustek would have no initiative during the development."

A robot invasion

Several reports suggest that robots are going to replace warehouse workers and fast food employees in the months ahead.



The Google Nexus 7

Operator billing on Samsung app store now available in India

Samsung has announced partnerships with telecom operators Vodafone and Airtel to provide operator billing integration for its app store. Available for prepaid and postpaid customers, the new service allows users to pay for any app on the App store via their mobile phone operator bills. The service kicked off on May 1st.

Besides apps and games, Samsung is also rolling the service for the recently announced Kindle book service built for Samsung. As part of this service, Samsung and Amazon will launch Samsung Book Deals, available to all customers using Kindle for Samsung.

Talking about the tie-up, Tarun Malik, Director of Media Solutions Center-South West Asia, Samsung Electronics, said, "This exclusive tie-up on Samsung App store further showcases our commitment to providing the best service experience to our customers. Given the poor credit card penetration in the country, we are positive that this move will be welcomed by customers. It is another step forward to expand our engagement with the publisher and developer community by enhancing adoption as well as monetisation from the store."

The limited penetration of credit cards makes this service a huge convenience for customers who can now use their Vodafone or Airtel services to purchase apps and content.

The trend of operator billing integration has been catching on in recent times. Nokia has been providing operator billing on Nokia Store for users for quite some time now. Earlier this year, Vodafone introduced a platform allowing purchase and sale of apps and content via operator billing.

According to reports, Microsoft is in talks with Indian telecom operators to provide operator billing for apps on its Windows stores within the next few months.

Leaked images of Samsung Galaxy S5 Prime reveal aluminium cover, QHD screen

The Samsung Galaxy S5 Prime once again made an appearance on the web ahead of its official announcement. S5 Prime will reportedly feature a 2K resolution display as well as an aluminium cover, making it a premium version of the flagship.

Leaked images show S5 Prime's aluminium chassis with brushed metal edges. There's also a speaker grill located at the bottom of the device. The images also show the phone's display, which is said to be a 5.2-inch QHD screen (2,560 x 1,440p resolution).

Rumoured specifications of the smartphone include 3 GB of RAM and a 16MP camera as on the S5. The new S5 variant is said to feature a new version of Android OS and the new Qualcomm Snapdragon 805 processor.

The Samsung Galaxy S5 Prime is expected to be unveiled in June, possibly at Samsung's event in NYC to be held on the 12th with a \$880 price tag.

The S5 Prime is set to compete with LG's upcoming flagship G3, which is also rumored to come with a metal chassis and QHD display.



Galaxy S5 Prime in a case supposedly



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<http://dgit.in/LovvQ3j>



The Internet burns

With so many hacks, how does the Internet take control of its security back from the bad guys?
<http://dgit.in/1jRxtZB>

LG G3 leaks again ahead of release

LG's next flagship smartphone – G3 – made yet another appearance on the web ahead of its official May 27 unveiling. Even as LG released an official trailer to build hype around its new flagship, the latest set of leaks leave nothing to the imagination.

Phonearena has posted as many as five press renders of the LG G3, revealing the brush metal finish and three colour choices: Black, White, and Gold. The images give a pretty good idea about what to expect from LG's next flagship. That said, new images are in line with the previous rumours/leaks – viz. different colour options and metal finish.

One of the images shows the top of the device, revealing an IR blaster and a secondary microphone. The LG G3 is rumoured to feature 5.5" QHD display, Snapdragon 801 SoC and 13MP camera with 4K video capture. In the meanwhile, check out LG's official G3 teaser at <http://dgit.in/lgg3leaks>

Sony D2403 specs leak, to take on Moto G?

Sony is working on an affordable Android handset that's being speculated to go head-to-head



Is this what the G3 will look like?

with Motorola's popular Moto G. Codenamed D2403, the new Sony smartphone has been spotted with GFXBench's benchmark listing, revealing specifications of the device.

The leaked Sony D2403 features a 4.4-inch 540 x 960



Sony please come up with a better codename

pixel (qHD) display. It runs Android 4.4.2 KitKat and is powered by a 1.2GHz quad-core Qualcomm Snapdragon chip with an Adreno 305 GPU (likely the Snapdragon 400 MSM8926) and 1 GB of RAM. The smartphone has an 8MP rear camera and 0.3MP front-facing camera and includes 16 GB of internal storage.

At the time of writing, the official name of the smartphone is yet to be revealed. However, considering the specifications, the Sony Xperia D2403 seems to be an upgrade to the Xperia L. While focusing on the high-end segment, Sony has launched quite a few mid-range Android devices such as Xperia M2 Dual.

Project Ara to be powered by Toshiba processors

Google's Project Ara smartphone, expected to be unveiled in 2015, will let users build their own smartphones and customise them. Toshiba is reportedly preparing three types of processors for the device, which will be used in the modules as well as within the smartphone.

According to Android Authority, the main processor in Toshiba's product line would be the company's TX series of micro-controllers, which are based on ARM's low-power Cortex M3 and M0 designs. Currently, Toshiba doesn't have a chip that offers the type of performance that comes from a Cortex-A powered Qualcomm or Samsung chips and will provide essential processing components on the basic device, instead of the main CPU.

Toshiba may also offer a range of integrated circuits, digital signal processor, smaller 8-bit microcontrollers, as well as its own CMOS image sensors that could be used in various modules of Project Ara.

It seems that Toshiba began working with Google on Project Ara in October 2013, and "was approved as a preferred supplier for this line, the only Japanese company to be given that status." Japan's largest business newspaper, Nikkei stated that the company would become the "sole chipmaker for the phone about a year after its rollout."

The basic project Ara smartphone will cost \$50, and people are expecting Google to sell millions of units in the first year of sales alone.

Head over to <http://dgit.in/ProjectARAMDK> to read about the Module Developer's Kit, which gives developers a better



Can't wait to get modular

idea about the possibilities of the modular smartphone.

Micromax Unite 2 A106 launched

Soon after Motorola launched the sub-7k smartphone Moto E, Indian smartphone brand Micromax announced the launch of a new Android smartphone – Unite 2 A106 – in the same price range and with similar specifications. Micromax claims that its Unite 2 is the first smartphone to support 21 languages including English, Hindi, Marathi, Tamil, Telugu and others.

Priced at Rs. 6,999, Micromax Unite 2 A106 is a dualSIM smartphone, sporting a 4.7-inch IPS display with 800 x 480 pixels resolution. It runs Android



The Micromax Unite 2

KitKat 4.4.2 (supports upgrades via FOTA) and is powered by a 1.3GHz quad-core processor along with 1 GB of RAM.

The Unite 2 A106 has a 5MP rear camera with flash and a 2MP front-facing camera – a feature missing on the Moto E. The smartphone has 4 GB of ROM and supports expandable storage up to 32 GB. For connectivity, the Unite 2 supports Bluetooth, Wi-Fi and GPS. It's powered by a 2,000mAh battery.

The Micromax Unite 2 comes preloaded with a slew of apps including 'Mad', 'Getit', 'Kingsoft Office', 'Opera Mini Browser' and 'Hike'. There are a few pre-loaded games like 'Marble', 'Burn the Rope', 'Toystory Smash'.



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On connected gadgets

An article on how gadgets need to be programmed to die in an increasingly connected world: <http://dgit.in/1h2boaF>



Revolution in new tech

Here are new technologies that will change human civilization as we've come to know it so far: <http://dgit.in/TJX0t3>

It's getting hot in here...

Summer's here! And it couldn't be more evident with well-established entities and new ventures alike heating up the online space

Google ports 'OK Google' to browsers

Google rolled out a Chrome 35 browser update that integrates the 'Ok Google' command into the latest browser version and Chrome OS. The new update is globally available for Windows, Linux and MAC. The new voice search feature in Chrome 35 allows you to simply ask a question to activate a Google search. You can also set up reminders and timers. To enable the 'OK Google' feature, Chrome users must click on the microphone icon placed within

account across devices. The Supervised Users feature – which is now here for Chrome browsers for Linux, Mac, and Windows – gives you manager controls permissions for each group member and can block users as well.

Google reveals cloud-based bookmarking tool

If reports are to be believed, Google is working on a new service that allows users to save, share and organise web content. Dubbed as 'Google Stars', the new service will reportedly

of your folders – you can either set it for public sharing or private viewing. You can add a name and description for each folder.

Google Stars will automatically organise content, detect spam and give you an option to share links to public folders. Other features include search box with auto-complete and suggestions, bookmarks with an option to add notes, drag-and-drop support and more.

Leaked screenshots hint that Google Stars will be a cloud service. It's expected to be initially available via an app or extension on Chrome. Google Stars will enable web pages, images, videos, email, Maps locations, Google+ pages, Drive documents and more to be moved to a library. If it's a success, Google may soon launch an app on Android and iOS platforms. Check out the Google Stars preview here: <http://dgit.in/imseeingstars>



Now you can talk to your browser

the main Google search bar. The update has been rolled out in US English as default and support for additional languages will soon follow.

When the feature was released in February in the US via Chrome Beta, Google had also announced another soon-to-be-added feature for Chrome users called 'Supervised Users', which will allow users to add and supervise multiple users in one Google

include a wide range of customisation features as well as options such as advance search and auto-detect spam.

In a leaked video and screenshots, Google Stars' home screen featured all the items users have favourited as well as an option to split them into folders and filters. There's an option to export bookmarks as well. Keeping security concerns in mind, Google lets you have more control of visibility



Google Drive can be used to host basic websites or even complex JavaScript-based web apps. You may publish any kind of static content on your website including HTML pages, images, CSS, icons, audio, video etc. Note, however, that Google Drive does not support web resources that make use of server-side scripting languages such as PHP. Here's how to do it: <http://dgit.in/Host-WebsiteOnGoogleDrive>

Facebook acts as wingman

Social network giant, Facebook, known for prying into users' personal information, has rolled out a feature in the form of a button called "Ask". The button is associated with information that a user hasn't specified. If a user hasn't declared his/her relationship status, friends of that user can

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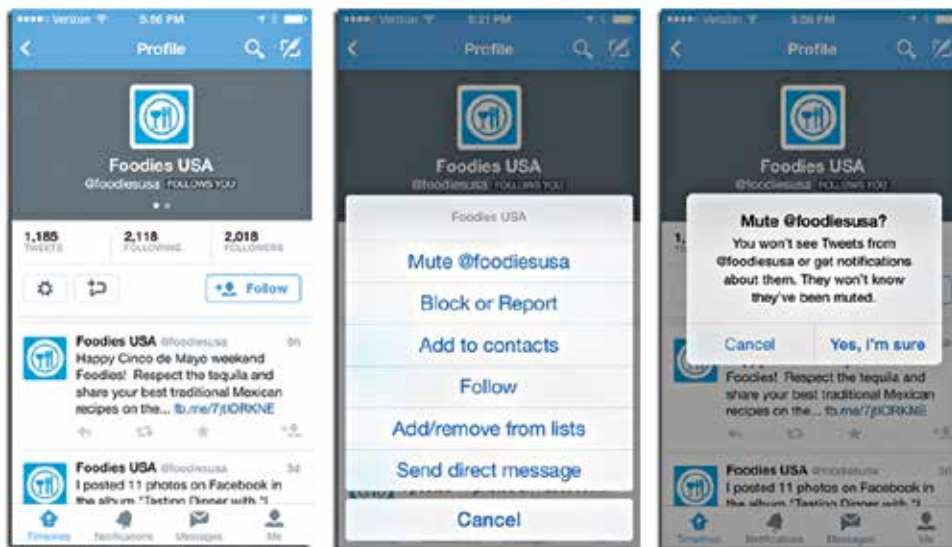
One complicated device

A path-breaking new device that aims to overcome the restriction in silicon performance is finally here: <http://dgit.in/1nk6khJ>



YouTube crowdfunding

Reports suggest that YouTube will allow users to crowdfund projects on the popular video sharing website itself: <http://dgit.in/1tBmhlx>



Twitter launches 'mute' button, lets you reset passwords by text

now ask about it. The button is visible to the person who is checking out a profile.

The new ask button doesn't only work for relationship statuses. It also lets users ask friends to list their work, college, school, address and other personal information...privately, that is (Facebook realises that if you wanted to make this information public, you would have done it already.).

Basically, all the information that hasn't been mentioned will have an Ask button next to each detail.

Once a user receives an inquiry, s/he will receive a notification from that friend (along with a personal message, if they chose to write one) and a list of options for replying.

The feature was quietly rolled out by Facebook without any announcements.

While this new feature may annoy some users, others may be ready to share personal information with another user who 'asked' him/her about it. Also, there's no obligation for any user to reply to any of the requests sent by friends.

Twitter launches 'mute' button, lets you reset passwords by text

Twitter has rolled out a 'mute' button, which lets users turn off posts/updates of certain users without unfollowing them. The feature has been introduced for Android, iOS and web users. The Mute button will prevent you from getting push notifications or SMS alerts for the users you choose to mute. The button is reversible and discreet, so no one will know if you activate this feature. Users can access the Mute feature from the Gear icon of the twitter profile page or from the 'more' link on any individual tweet. To learn more about the new feature, check out Twitter's help center page at <http://dgit.in/quiettwitter>. Third-party clients like Tweetbot already support the mute feature. The app allows you to also mute hashtags and keywords.

Prior to this, Twitter introduced a feature allowing you to reset your passwords with a text message. The feature was launched in an effort to make the social network more

secure for users. The new process allows users to select the email address or phone number registered with your account to receive the reset information. "That way, whether you've recently changed your phone number, or are traveling with limited access to your devices, or had an old email address connected to your Twitter account, you've got options," points out Twitter in a blog post.

The system will also analyse the user's account history, location, device, etc to identify suspicious activity. "If we identify

a login attempt as suspicious, we'll ask you a simple question about your account – something that only you know – to verify that your account is secure before granting access. We'll also send you an email to let you know that we've detected unusual activity so you can update your password if need be," adds Twitter. The new password reset process has been launched for Android and iOS.

Over 100 tech companies unite to oppose 'Net Neutrality' rules

"Net neutrality" has been in the news for quite a while now. It is a plan that would regulate how internet service providers manage web traffic. The Federal Communications Commission (FCC) of USA has proposed the rules, which could potentially threaten "free and open Internet", according to Senator Al Franken (D-Minn.).

Now, over 100 leading tech firms – including Google, Facebook, Yahoo, Twitter and Amazon – have written to the U.S. telecom regulators. In the letter to FCC Chairman, Tom Wheeler, the companies warned of a "grave threat to



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<http://dgit.in/1r5Tojx>



Internet = Music

Check out this amazing piece of software that turns the Internet into a massive musical instrument:
<http://dgit.in/1Lrtgs>

the Internet.” The tech firms said that “[The FCC must] take the necessary steps to ensure that the internet remains an open platform for speech and commerce.”

Sen. Franken said that the rules proposed by the FCC Chairman would let corpo-



rations buy into an Internet “fast lane,” at the expense of consumers and smaller and emerging companies. Mozilla, Netflix Inc. and Reddit have criticised these rules ever since they were created.

Net neutrality could potentially allow big corporations to get their content to consumers faster than their rivals, creating higher Internet service rates and new obstacles to accessing the content that users want, according to Franken.

Public interest groups have become increasingly concerned that the new rules will end net neutrality – the concept that all internet traffic should be treated equally on the web. “According to recent news reports, the Commission intends to propose rules that would enable phone and cable Internet service providers to discriminate both, technically and financially against Internet companies and to impose new tolls on them,” the tech companies wrote in their letter. “If these reports are correct, this represents a grave threat to the Internet.”

More than a million people have already signed petitions to FCC calling upon it to enshrine

net neutrality rules and prevent a tiered system. The vote on the plan was scheduled for May 15.

IzitrU verifies authenticity of photos

IzitrU, pronounced a bit like “is it true,” is a new service that lets you upload a photo and analyse it to check whether it has been modified. The free service makes it easier for upright photographers to prove the authenticity of their images.

IzitrU has been launched by a start-up called Fourandsix, and gives simplistic results, telling you if the image is an original or has been modified after being transferred from the camera.

To use the service, a photographer can upload a photo through the website or an iPhone app. After uploading, IzitrU runs a battery of six forensic tests that can identify editing or authenticity of the picture including device signature analysis, double jpeg detection, jpeg structure analysis, sensor pattern analysis,

JPEG co-efficient analysis and JPEG ghost detection. It then posts a version of the photo with its trustworthiness rating. IzitrU will create a dedicated page for the photo that displays one of five trust levels: high, medium, potential file modification, undetermined file history and no trust.

“Anyone who cares enough about having people believe their photo can post it to IzitrU and share it through whatever service they want, like Facebook or Twitter”, said Chief Executive, Kevin Connor.

CricHQ, cricket-based social network in India

CricHQ, a cricket-based social network, has officially announced its entry into India. Backed by cricketers such as Stephen Fleming and Brendon McCullum, the network is available via mobile app (Android, iOS and Windows Phone) and has a web version as well.

Unlike other cricket-based websites, CricHQ focuses on social elements. It allows users to keep a tab on latest cricket scores from all levels of cricket, all over the world, follow their favorite players and receive notifications and updates on what their favorite teams or players are doing.

You can also keep track of games played at international, domestic, club and school levels. There's a Facebook-like newsfeed, which shows activities of players being followed. Users can create their profiles and post videos and pictures as well. It also has advanced match analysis tools such as Wagon Wheels and more.


Speaking about the social network in an exclusive interaction with Digit, CEO of CricHQ, Simon Baker said, “CricHQ will

help identify talents at a very early stage, which wasn't possible before this. With more cricketing boards joining the platform, CricHQ could be of great help to the game and talents across the country..We plan to reach out to smaller cities in India. We see a lot of potential in these cities.”

Twitter launches multiple photo sharing feature for Web and Android

Social networking site Twitter has announced new photo-sharing ability for users, that allows editing images by adding filters and the ability to share more than one picture in a single tweet as well as tagging friends in a picture. The new photo-sharing feature has been rolled out for web and Android users only. The feature might be introduced for iOS users soon.

Twitter has posted a new page called “the ultimate guide to sharing photos”, which explains the features in detail. The new feature allows users to share up to four pictures in one single tweet. The new feature also adds the ability to edit photos once a final picture has been selected. New editing options included are cropping, adjusting brightness and adding filters to the images. The app also brings the ability to tag multiple users in a photo tweet, similar to tagging friends in pictures on Facebook. The tweet will be displayed to only those friends you have tagged in the photo. The guide also tells users how they can share photos in Direct Messages on Twitter.

Are these initiatives a big to encroach on Facebook territory or simply a way for the microblogging site to stay relevant? Only time will tell. 



Is that an authentic photo?



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No net neutrality?

An argument on how net neutrality isn't the only way to keep the internet free and fair for all
<http://dgit.in/1jRxtZB>

**3D printed fruit**

This is the world's first 3D printed fruit. Is it juicy and tender? How sweet is it? Let's find out:
<http://dgit.in/1jRxtZB>

Making it more secure

We take a look at the latest developments in the Internet security segment.

Internet scammers have started targeting Facebook users in India. According to Symantec security experts, scammers are targeting users to gain more likes and followers on the social network. The new scam is a variation of a method called self-XSS (self cross site scripting), which helps trick users into copying and pasting code into their browser's console that could perform various actions on their behalf.

Researchers reveal a post went viral on Facebook from a particular page showing a purported video tutorial on "Facebook Hacking" with a disclaimer saying – it is meant for educational purposes only. The post redirects to a document hosted on Google Drive, which feature some code, which supposedly allows users to reveal their friends' Facebook passwords. The instructions ask users to disclose their friends' Facebook passwords. The instructions attempt to convince the user to paste the code into their browser console window and asks them to wait two hours before the hack will supposedly work.

"What really happens when you paste this code into your browser console window is that a series of actions are performed using your Facebook account without your knowledge. Behind the scenes, your account is used to follow lists and users, and give likes to pages in order to inflate the follower and like counts defined by the scammers," explains Symantec in a detailed blog post. Symantec reveals this type of scam was first circulated



The infamous Facebook scam

in 2011, while the current variation has been around since early 2014. Scammers manage to gain massive success with this scam earlier this year with gaining 50,000 to 100,000 likes and followers on a number of pages and profiles.

"For this campaign, the individuals responsible are based in India. They have modified the original authors' code by simply adding their own pages and profiles into the script to increase their follower and like counts," adds the blog.

73% children under 13 using social networking sites

Should children below 13 years of age be allowed to join the social networking websites? It has been one of the long debated issues globally, especially in the wake of growing case of cyber bullying, child pornography and trolling. In India, the government

is already making efforts to prevent children under 13 years from accessing the social networking websites. However, a new study conducted by ASSOCHAM reveals about 73 percent of children under 13 years of age in India are using the social networking websites such as Facebook.

The study was conducted in metro as well as tier 2 cities of in India including Delhi-NCR, Mumbai, Bangalore, Chennai, Kolkata, Ahmadabad, Hyderabad, Pune, Lucknow and Dehradun. Survey further points out about 75 percent of the parents are aware about their children in the age group of 8-13 years using Facebook. Another shocker is about 82 percent of parents provided wrong information to create a Facebook account for their children.

"Nearly 25 percent of 13-year-olds, 22 percent of 11-year-olds and 15 percent of 10-year-olds are on Facebook, while 5-10 percent of 8 and 9 year-olds are also active on the site." Facebook has emerged as the most preferred social networking site among this age group. Other sites like flick.com, Google Plus, Pinterest are being used by 85 percent of children in the age group of 10-16 years," adds the survey.

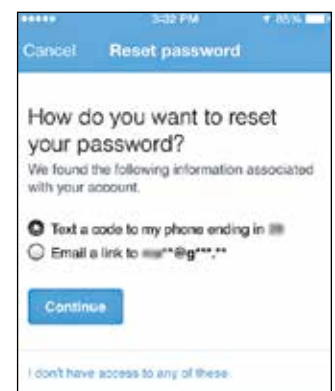
Commenting on the survey findings, Mr. D.S Rawat, General Secretary of ASSOCHAM, says, "Children are gaining access to social media sites at a younger age, which could expose them to content, people or situations that are out of their depth." He points out that such a high number of children below under 13 years of age on social

networking sites could lead increase in cases of cyber bullying, which could have adverse psychological impact on them.

Twitter lets users reset passwords with text message

Twitter has introduced a redesigned password reset process in an attempt to make the social networking website more secure and more convenient for users.

The new process allows users to select the e-mail address or phone number registered with your account to receive the reset information. "That way, whether you've recently changed your phone number, or are traveling with limited access to your devices, or had an old email address connected



Apparently we love this feature

to your Twitter account, you've got options," points out Twitter in a blog post.

Twitter has rolled out a new password reset process for Android and iOS users. Twitter explains that it has developed a system that analyses log in attempts on users' account by considering factors such

The top 10 algorithms

Here are ten definitive algorithms that have come to dominate our world over time:
<http://dgit.in/S6hhrp>



Smart gun's effectiveness

Just how smart is a smart gun supposed to be?
The guys over at BBC did some testing of their own:
<http://dgit.in/1mawwIV>

Security watch

as location, device and log in history and identifies suspicious behaviour.

"If we identify a login attempt as suspicious, we'll ask you a simple question about your account — something that only you know — to verify that your account is secure before granting access. We'll also send you an email to let you know that we've detected unusual activity so you can update your password if need be," adds Twitter.

With online security and privacy becoming a prime concern, Twitter's new security feature is certainly a welcome move. Twitter has been long targeted by cyber criminals, though it has made various efforts to improve security features on the social network. Back in November 2013, Twitter added a new layer of protection, which it calls 'forward secrecy', to its traditional HTTPS encryption.

iPhone users can bypass iOS 7.1.1 lockscreen - just by asking Siri

Apple's iPhone 5s comes with the much-awaited Touch ID fingerprint sensor for biometric authentication, however a recent video by a security research group has revealed how easily the lockscreen, which is protected by a pass code, can be bypassed by using Siri in its iOS 7.1.1 update.

The video shows how Siri will tell you to access the contacts list of the Apple iPhone 5S, make phone calls, send text messages, all without even unlocking the smartphone. Siri would easily let you bypass the fingerprint scanner/touch id or even the 4-digit pass code to call someone on your contact list. However, Siri will ask you to unlock the phone if you ask it to show you the contacts list.



You shall not pass! Just kidding.


Apple is yet to respond to the latest flaw. Although it has rolled out fixes for each of its lockscreen bypass tricks in the past. Sherif Hashim, who found the bug, suggested that users should disable Siri from lockscreen, to protect themselves. The bug also affects other devices running iOS 7.1.1, but it is not clear whether any other iOS versions are also vulnerable.

Facebook reveals anonymous app login at F8 conf.

Facebook CEO Mark Zuckerberg has revealed that in the future FB users will be able to log in to third party apps anonymously using their Facebook login. He also launched a mobile ad network, branded the 'Facebook Audience Network', that will help brands serve ads on third-party apps using user data collected by Facebook. Both announcements were made at Facebook's F8 conference which took place after a two year gap in San Francisco, early today morning.

With respect to anonymous login, Zuckerberg explained that many users did not feel comfortable sharing their details with an app that allowed Facebook login, without trying the app first. By selecting the "Log In Anonymously" option, users will now be able to log in to apps and services and ascertain whether the app is worth using and if it can be trusted with their details. If users are afraid that logging into a certain app will result in their friends being spammed with requests, then they can opt for the anonymous login. Doing so will ensure that the app devel-

opers do not get to see your identity or details and will only be able to do so once you choose to sign in to the app in a regular manner. Zuckerberg revealed that the anonymous login option was being tested out by a few developers (like Flipboard) and that it would be opened up to other developers in the future.

Another announcement that highlights Facebook's attempts at improving user privacy also dealt with app logins. The social network will now allow users to see and control all data that an app requires when you're logging in. The new login screen will allow users to uncheck any part of their data they don't want the app to receive before actually logging in. The granularity of this means that users can (as an example) choose to let an app see their likes and email address but not their friends list and birthday. Users will also get a newly designed app control panel that gives them a better view of the apps they use and control their permissions. 



The illusion of anonymity

Space age

The sky up above just can't be an unlimited litterbox. Find out what mankind is doing to control space debris

Rise of LoL

This is the story of how one video game turned into a multimillion dollar enterprise and professional sport: <http://dgit.in/RpjBjf>

Anti-Snooping Devices

The internet is seeing a dramatic shift towards anonymity.

Paanini N Navilekar
readersletters@thinkdigit.com

Remember in Dan Brown's novel *Digital Fortress*, when NSA agent Susan Fletcher is trying to figure out why their famed supercomputer ('TRANSLTR') is taking forever to decrypt a seemingly innocuous code? Turns out the 'code' was actually a worm designed to bring down the supercomputer, written by an ex-NSA agent who was unhappy with the NSA being privy to the personal communication of millions of people over the world.

Turns out, the NSA are huge Dan Brown fans.

In an eerily similar series of events, the NSA (National Security Agency, USA) was found to have conducted mass electronic surveillance across internet services such as Google, Facebook, Yahoo, Amazon etc. The real-life analogue to Dan Brown's tragic hero, played by a 29 year old ex-NSA agent, Edward Snowden, stated that the reason behind leaking the documents which made this big reveal was that he didn't wish to live in a society that indulges in such unethical practices. Snowden fled the US, seeking political asylum in a number of countries, as his home country launched an all-out man-hunt to track him down.

A wake up call

In response to these leaks last year, several experts began stressing the importance of securing your personal data and communications from eternal surveillance, chiefly by encrypting it. Encrypted data can only be read by someone who has a 'key' to it - a password that unlocks

the true contents of the message. While encryption isn't a one-stop solution, it's better than nothing. However, as is always the case, increased security comes at the cost performance overheads. Encryption isn't fool-proof, nor can everything be encrypted. Take WhatsApp. It stores chats in an encrypted database on the phone's local storage. As a proof of concept, a hacker gained access to the encryption keys and was able to read all the user's chat messages in cleartext. (<http://dgit.in/WhatsAppHack>) In theory, this



The Boeing Black will destroy all data and software if it is forced open.

means any app installed on your phone can read/modify/upload these chats to an external server and wreck havoc with your confidential data.

The vaults of the new age

A number of security-conscious companies and individuals expressed concern over the heightened surveillance, and nearly a year later, we're seeing the fruits of their effort. Secure smartphones such as Silent Circle's **BlackPhone** and Boeing's

Black, as well as encryption-focussed hardware are making themselves seen and heard in the market. These devices usually feature secure, encrypted communication channels as well as features that make the device tamper-proof. Koolspan has a product called the **TrustedChip**, a chip that can be plugged into the microSD card slot of an Android phone, which features an encryption engine that encrypts all data transactions on the device.

The Boing Black

Boeing, the American aircraft manufacturer, recently unveiled the Boeing Black, an Android based smartphone aimed at industries requiring a high level of secrecy, such as defence establishments and government agencies. Its specs are fairly standard for a mid-range smartphone - a 4.3" qHD display with a resolution of 960x540, a dual-core 1.2GHz ARM v9 CPU, a 1590mAh battery and a dual-SIM supporting both GSM and CDMA networks. What's special about it, is that it runs a custom version of Android that includes a "Hardware Encryption Engine" that encrypts the local flash storage, as well as any data transmitted from the device. The back panel of the device can be customized to feature a solar-charger, a biometric scanner and even satellite transceivers. A feature called the "Hardware Root of Trust" verifies the authenticity of any software/apps that are installed on the device through a set of digital signatures, while a Secure Boot feature ensures that only secure and approved system images can be booted on the device. If the system image is modified in any manner by an unauthorized source, the device will simply refuse to boot. The real clincher, though, is its self-destruct



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Hackers > iOS activation

Bypassing the iOS activation lock is no problem as hackers have allegedly smoked it already: <http://dgit.in/1mawwIV>

Password netiquette

There are several dos and don'ts when it comes to online passwords. Here's a ready reckoner: <http://dgit.in/1poBjsn>

feature - the phone uses a special casing, that if tampered with, will trigger a series of functions that will erase all data contained on the device.

The alternative: Blackphone

While Boeing's Black isn't open to regular customers, a more viable option for privacy conscious customers is the Blackphone. BlackPhone, the product, is an Android-based smartphone that provides secure texts and voice and video calls to its subscribers. (Blackphone, the company that sells and supports the \$629 device, has as its co-founder Phil Zimmerman, who invented the PGP encryption algorithm in 1991, which is still the most popular encryption method for securing



The Blackphone is the first privacy-focussed Android phone

emails, files and even whole disk drives.) The Blackphone will be manufactured by niche smartphone maker Geeksphone, while Silent Circle, known for its suite of secure communication apps, will provide the software. The Operating System on the phone, is a version of Android stripped of all Google services, called PrivatOS. Baked into the OS itself, are Silent Circle's flagship apps - Silent Phone, which provides encrypted voice and video calls, Silent Text which has encrypted messaging, and Silent Contacts which guards your contacts from apps trying to illicitly upload your contacts to their servers. While these apps can be used on any Android/iOS phone by purchasing a subscription, the Silent Phone comes bundled with a free, 2 year subscription to Silent Circle's suite of apps, a subscription to SpiderOak's encrypted cloud storage service and Disconnect, an app that anonymizes your search queries on Google and Bing by routing the traffic through a VPN.

The phone itself features some powerful specs - a 4.7" 720p screen, a 2GHz processor, 16GB of onboard (non-expandable) storage and an 8MP camera. The phone doesn't use any proprietary hardware, which means most of the platform code will be open sourced, allowing independent engineers to audit and patch the code against any security loopholes. Given that most Android malware ships in the form of innocent looking apps that demand access to an overwhelming list of permissions, Blackphone's PrivatOS includes a full-fledged Security Center that gives you fine-grained control over the data your apps can access. You can individually allow and deny access to permissions on a per-app basis, unlike stock Android which forces you to either accept or decline a blanket list of permissions. While the founders warn that no device can be considered 'NSA-proof', the Blackphone is a firm step in the right direction.

The TrustChip

If you'd rather not give up your existing smartphone, Koolspan's TrustChip is a \$119 hardware-based encrypted communications medium. The TrustChip is basically a chip that fits into any standard SD card slot. Once installed, it can be used to securely communicate with other users who've installed the chip. TrustChip also includes TrustGroups that allows Group Administrators to selectively disable or enable features and implement security policies for the group. For phones that don't have a microSD slot (for e.g. iPhones), a special accessory called a TrustSleeve can be attached to the phone. The TrustSleeve also functions as an extended battery pack. In order to call other users of TrustChip, users will have to use a special app on their smartphone. The TrustCall secure calling feature requires a \$25 monthly subscription fee per subscriber.

What can you do?

While most of the anti-snooping devices listed above aren't available in India, that doesn't mean one should get complacent and ignore the issue altogether. There are a lot of tools and apps that you can use

(many of them free of cost) that can significantly raise the barrier against digital spying. For starters, use HTTPS Everywhere (<http://dgit.in/HTTPSeverywhere>) a browser add-on for Chrome, Firefox and Opera that enforces the secure HTTPS protocol on all sites that support it. If you frequently store sensitive data on your local hard disk, TrueCrypt (<http://dgit.in/Truecrypt>) is an open source, cross platform disk encryption utility for Windows, Mac OS X and Linux. It works by creating virtual drive partitions that are completely encrypted using the military-grade AES-256 encryption standard. TrueCrypt can also encrypt external media like pen drives or external hard drives. Alternatively, certain versions of Windows 7 and 8 include the BitLocker disk encryption tool, while Mac users can use the FileVault utility. For sensitive files stored in cloud services like Dropbox and Google Drive, BoxCryptor is a tool that perform on-the-fly encryption on a file-by-file basis, rather than encrypting an entire drive (<http://dgit.in/BoxCryptor>). SecureGmail is a Chrome extension that encrypts emails sent through Gmail. While sending an email, enter a passphrase to encrypt the email is created. (<http://dgit.in/SecureMail>). The sender will then have to use the same passphrase to unlock the contents of that email message. Microsoft Outlook has a built-in encryption feature that uses Digital Signatures to verify the authenticity of the mail. The recipient must possess a digital signature similar to the one the sender has to read the contents of the message. Microsoft has instructions to set up this feature on <http://dgit.in/OutlookEncryption>.

While no device or software is going to be 100% secure from attacks or unauthorized surveillance, it's the responsibility of every netizen to ensure that one's private correspondence remains private. Even law-abiding citizens have reason to be concerned about the heightened data collection, both by corporations and government bodies, for this type of confidential data could be lethal in the wrong hands. Encryption is just one of the steps you can take, and like we said earlier, it's not foolproof. Still, it's a lot better than the alternative - being a data-spewing firehose every time you go online. **4**



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Chemistry can be absolutely beautiful at times. Here are some GIFs as proof: <http://dgit.in/1IK0rX4>



Microbes on Mars

Not alien life, but Curiosity might've taken microbes from Earth on to Mars <http://dgit.in/1gZdyYv>

The War Against Space Junk

The sky up above just can't be an unlimited litterbox

Samir Alam

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Look up at the sky on a clear night. High up, away from the blinding glow of the metropolis you'll see a smattering of stars, colourful flickering planets and empty blackness. Over the centuries we've learnt that the sky is filled with so much more than what we can see. The many billions of planets, stars, meteors and other celestial bodies are the scattered remains of a once converged universe now spreading out in all directions. Everything we've ever seen in the heavens is touched by natural creation and is of ancient origins - well, almost everything.

Spatula From Space and Other Clutter

In 2006 during a routine testing mission near the International Space Station, astronaut Piers Sellers of the space shuttle Discovery accidentally lost a spatula. This spatula joined the other millions of man-made objects orbiting the Earth, with no purpose and no predictability. Along other artificially introduced debris of smaller size, such as metal shavings, paint flecks, frozen urine and other assorted items, it has become impossible to keep an accurate count.

But the larger fragments, those over one centimeter in size, have been successfully tracked out of necessity as they pose a direct threat to human space flight. The most recent count of space debris places



The Mir station's solar panels have already suffered major damage from space debris.

over 500,000 detectable fragments between the size of 1 cm and 10cm, and over 20,000 fragments about the size of a tennis ball floating around the Earth. These remnants orbit at speeds of over 28,000 kilometers per hour, which is 14 times the speed of sound, and are a constant threat to our orbital presences. The impact that even the smallest paint flecks can have on the equipment orbiting Earth can prove devastating. Already scores of these fragments are primed to hit communication satellites, defence satellites, the Interna-

tional Space Station and any other craft sent up to space if we don't detect them and adjust our flight plans.

The dramatic influence that space junk can have in the long run can easily be witnessed in the film *Gravity*. But to truly appreciate the relevance down here on Earth all you have to do is imagine suddenly losing all telecommunications facilities - no cell phones, no television, no GPS, no weather reports - all gone. Just because a spatula lost in 2006 came around and smashed violently into an orbiting com-

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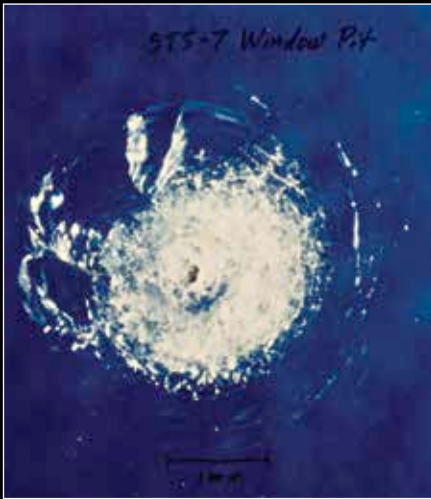
Sentient bots impossible

If you do the math, sentient robots aren't a mathematical possibility or probability. Here's why: <http://dgit.in/TFY6Ge>



The world's awesome

And we prove it to you by highlighting 60 things of the world's awesomeness: <http://dgit.in/1m5QVil>



The damage shown is on the Space Shuttle Challenger's front window and was caused by a fleck of paint.

munications satellite careening it out of its orbit and possibly crashing it into another satellite. This is not a movie reality but a real possibility.

The very reason the orbits are cluttered is because of the prime satellite real estate that exists between 200 and 2,000 kilometers for useful satellite placement. And it is there that our spacecrafts have ejected most of the waste to begin with - from rocket boosters to human waste and everything else - it's like littering the road outside your house. The extent of this waste land is across all orbit ranges from 200 kilometer to 36,000 kilometers.

All of these orbit bands are cluttered to varying degrees. The lower regions which are ideal for piloted spacecrafts and the 10,000 to 20,000 kilometer range orbits which are best for navigation and communication satellites - both are under siege of space junk. The highest band used for geosynchronous telecommunications and weather satellites is the sparsely polluted orbit purely due to its relatively rare usage.

However, the most critically damaging areas for collisions are within the Low Earth Orbits, which are sun-synchronous, as well as the higher altitude orbits which are geostationary. Both of these areas are critical to our presence in space and have been seriously cluttered over time.

And even though we've seen smaller and mid-sized fragments in the lower orbits quickly descend into the atmosphere

and burn up - there are still more than 1,500 objects that are larger than 100 kilograms in mass moving at velocities of nearly 8 kilometers per second, directly crossing paths with all our essential satellite orbits. Together with the hundreds of thousands of mid-sized objects and the millions of small-sized ones, we can expect to see the Earth being slowly enveloped in a field of trash in the next few decades, which is a clear and present threat to our relationship with space travel.

Orbital Collisions and the Kessler Syndrome

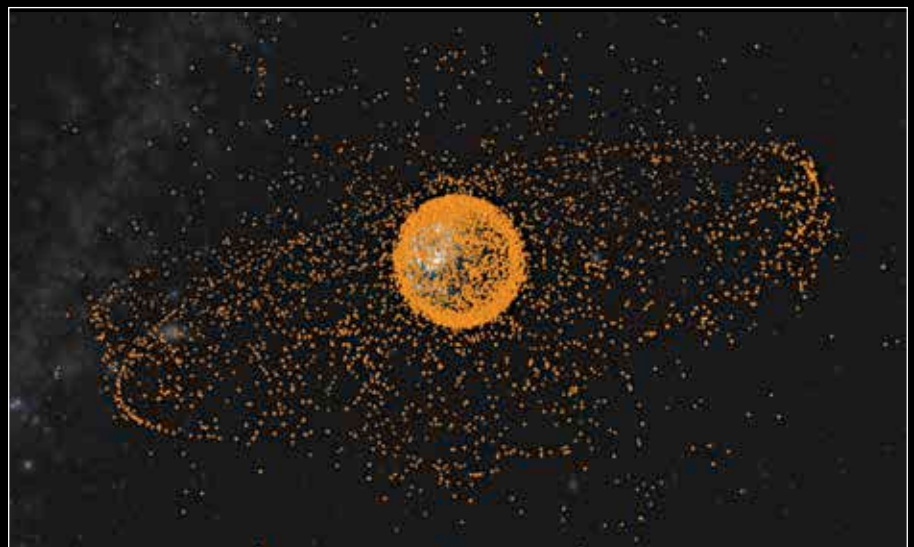
The two most recent events that gave light to this threat of orbital collisions took place in the last decade. The first incident was a large collision that took place in 2007, when China's botched attempt to destroy an old weather satellite with missiles ended up creating 150,000 new fragments. One of these fragments was the prime suspect of causing the 2013 collision with a Russian BLITS (Ball Lens In the Space) laser ranging satellite.

The second incident was the first real major collision of space debris and took place in 2009 when a 950 kilogram defunct Russian satellite - the Kosmos-2251 - collided with a 560 kilogram operational commercial American satellite - the Iridium-33 - just 800 kilometers over the Earth (Serbia) at relative speeds of over 42,000 kilometers per hour. This epic catastrophe scattered incalculable fragments of space

trash in heaping clouds over the Earth endangering all known space programs in the area. These threats have gone so far that the International Space Station has had to radically adjust its orbit path twice in one month (April 2014) to avoid a collision with large pieces of space junk.

This increasing threat has been researched extensively by many scientists in recent years but the most significant warnings were given by NASA scientist Donald J. Kessler early in the history of space travel. In 1978, Kessler conceived a scenario where the density of debris in Low Earth Orbit would reach such critical mass that a cascade of collisions would be inevitable. Kessler updated his work by 1991 with new data and measurements making it definitively clear that a 1 kilogram fragment could easily destroy a 1000 kilogram spacecraft into numerous 1 kilogram pieces. This exponential growth in large sized space debris has been modeled and studied to be surprisingly accurate to become popularly known as the Kessler Syndrome.

The sequence of collisions brought on by the Kessler Syndrome is predicted fill up the Low Earth Orbit region with millions of pieces of shrapnel which would make it impossible to navigate future space missions due to the resulting wall of garbage. And as more and more equipment finds its way to orbit, the likelihood that the Kessler Syndrome type outcome might occur becomes even greater.



We might have just invented a fence to separate us from space by sheer stupidity.



History of death ray

Since time immemorial, we've tried to harness the sun into an effective weapon, but with little success <http://dgit.in/1orKWGW>



Time travelling photons?

Can photons travel through time via a wormhole? What if they could? Hmm <http://dgit.in/1IK1wOl>

Space Age

Building A Space Fence

The most obvious way to tackle the problem was devised as early as 1957 through implementing tracking systems which was in the form of NASA's Space Object Catalogue. But as the presence of space junk became a larger threat it is now maintained by NASA and the United States Department of Defense. Using their Space Surveillance Network technology systems they are able to maintain tracking information on objects as small as 5 centimeters within the Low Earth Orbit region and objects larger than 1 meters within the high altitude geosynchronous orbit region. In total the number of objects within their tracking parameters is only about 21,000 with only statistical guesses for the rest. And this scope is woefully inadequate

To make up for this lag U.S. government has been looking to create a more reliable solution which has popularly been known as the Space Fence. Unlike a physical wall, the Space Fence program would massively overhaul the existing tracking and surveillance systems to broaden their scope. The space fence is simply a high-frequency radar system that is capable of discovering even the smaller debris that are floating around in space.

The yet to be built system by the Americans will be awarded to either Lockheed Martin or Raytheon in 2014 and is expected to increase the tracking coverage by a factor of ten. Similar developments by the European Space Agency are also under way in the form of the Space Surveillance and Tracking system. The ESA's system will include data gathering from across the world in the form of radar and optical systems from national space agencies, defence departments and private institutions. The data gathered would be analysed for real time and planned guidelines for future space missions.

Operation Clean Up

Even as these projects work their way towards implementation the real concern isn't on whether we will be able to track and adjust our space operations but how will we escape the inevitable reality of this space pollution. This problem is highly complex and layered; from setting up guidelines to-



The Sling Sat ballets across space from one debris to another using momentum as propulsion for minimum fuel use.

wards mitigating the addition of new debris all the way to figuring out a way of removing the space debris that are already in orbit. The multiple issues of technological capability, financial feasibility and ownership rights is a constant thorn in the side for anyone interested in taking on the challenge. The biggest one of which is figuring out a method of removing space junk as it already exists.

In 2012 a project designed by the Swiss Space Centre known as the Clean Space One was a step in the right direction. The Clean Space One vessel coupled with a defunct Swiss satellite and forced it to safely deorbit but the long term cost were calculated to be too high. Another one of the plans that is under consideration is the use of the commercial Space Infrastructure Servicing vehicle slated for launch in 2015. The SIS is meant to function as a fueling depot and service centre for communications satellites but is being designed with the ability to push defunct equipment towards "graveyard orbits" which would lead them to safely burnup in the higher atmosphere.

But as the costs of even these clean up mission comes at par with any other space mission they are not considered practi-

cal. To resolve this financial issue, a new approach has been devised known as the Space Sweeper with Sling-Sat or 4S. The 4S satellite is designed to grapple large space debris and eject them to a burn out orbit. The sequential movement from debris to debris provides the 4S with the momentum needed to move from target to target. But even with such innovation the issues of debris ownership still slow down progress. Simply put, a Swiss cleanup vehicle isn't allowed to even touch an American satellite without permission even if it's nothing more than trash. And permission is hard to come by from any country.

Save Us From Ourselves

So even as technological innovation moves forward and undoes the consequences of past innovations we find ourselves back to the human element. Space is a vast arena where conflicts in nationality and politics aren't conducive to progress. The very ambition that sends us to space is now at risk and unless the countries of the world are able to set aside their political concerns and work together each passing day brings us closer to seeing the sky filled with junk rather than stars. ■

New Android flagship

The OnePlus One smartphone is one unbelievable product, which will blast off all other contenders



Stealth motorbike

DARPA has created a new hybrid stealth motorcycle that makes close to no sound as it runs <http://dgit.in/1ggKTLo>



SteelSeries Stratus – Gaming Controller

Today's smartphones are casual gaming devices, everyone knows that. So why not save your opposable thumbs some much needed pain and invest in a good controller for smartphone gaming instead? The SteelSeries Stratus, one of the best smartphone gaming controllers out there, promises to do just that. It looks like a miniature Xbox controller, with all the bells and whistles expected of a gaming controller. It fits on to all the latest iPhones, iPod Touchs, and iPads. If you want to take your iOS 7 gaming experience to the next level, things don't get any better than the SteelSeries Stratus.

Droolworthy accessories that add extra oomph to your iPhone

After buying a smartphone, there are some things, some companion accessories and items that are essential to better utilize your smartphone's features or safeguard its integrity. Here we list out some of the basic essential devices you need to ensure that your smartphone is pimped out to the maximum. And after owning these gems, you can be rest assured that your smartphone won't just be a smartphone anymore.

SnappGripp – Camera and Photography

It all started with a Kickstarter campaign. The Snappgrip controller is primarily meant for an iPhone 5/5s and it mounts to a protective phone case so that you can conveniently attach it when you want to use your handset for some serious photography. It's pretty to assemble, just snap on the Snappgrip controller and gain access to real shooting controls including: Shutterfull press to take picture, half press to focus. Shooting Mode, Portrait, Landscape, Flash, Video, Zoom In Zoom Out. On the underside you'll find a standard tripod mount, standby power switch. The whole nine yards, if you're interested in taking your smartphone photography skills to the next level.





Reading faster isn't better

Does reading faster mean reading better? Not always. Here's an article that tries to answer this question: <http://digit.in/1kz5e0s>



Father of PC OS

Gary Kildall, who created the BIOS, and achieved other milestones is being commemorated: <http://digit.in/1vWj4Px>

Drool maal



Moment – Lens

Now you can have no excuses for below-par photos. When it comes to mounting lenses on to your smartphone, Moment promises to be one of the best in the business. Compatible with any iPhone, iPad or Samsung Galaxy smartphone's onboard lens, these Moment lenses are of two types: wide-angle which offers an 18mm field of view, while the telephoto version provides a 70mm field of view. Both Moment lenses are built well from machined metal and glass, and don't feel cheap at all, rivalling the type of expensive lenses you might use on a DSLR camera. The lenses are shipping later this week, and should interest you if your phone's camera just isn't good enough.

Mophie iPhone Space Pack

If you have an iPhone, you must invest in a Mophie Space Pack. It's a sleek jacket for your beloved phone, but not without two essential tricks built into it. With 1,700mAh of power, the Space Pack's battery effectively doubles the life of your phone (the 5S has a 1,570mAh battery, the 5C 1,500mAh, the iPhone 5 1,440mAh). But its real selling point isn't the battery life, though, which is good. Because it also offers previously unheard of external storage (additional 32GB or 16GB) to your iPhone. Now you can shoot photos, music and videos directly onto the external storage. Sounds like a lifesaver, doesn't it?



Case+

Quite simply this Logitech's iPhone accessory kit, which truly promises to add a new level of ubiquity to your iPhone. Basically, it's a multi-accessory system which connects and attaches to a magnetic base that fits onto the phone, which is called Case+. To this you can further attach +Tilt, which is nothing but a kickstand and cord keeper. Next you can attach the +Energy, a Mophie-like battery extender that we spoke about alongside (it's rated to double your iPhone's battery life). If that wasn't, you can also connect the +Drive extension to this system, which helps you mount your iPhone to a car window or dashboard. Last but not least comes the +Wallet, which gives you a place store your credit cards and cash without carrying a wallet. Quite a handy system, aye?



Fastest robots on legs

Robots are evolving, slowly but surely, and here's the cheetah of their kind, so to speak:
<http://dgit.in/1plJzcS>



10 Google Now features

Google's smart assistant is a jack of many trades. Here's what all it can do:
<http://dgit.in/1neNs3l>

OnePlus' One could be **"the Ultimate Android phone"** for just \$299



The Shenzhen-based startup has unveiled its first flagship smartphone whose specs and price clearly show that OnePlus wants to lock horns with the search giant's Nexus series. OnePlus calls One as the "flagship Killer".

their money as it costs almost half the price of others' flagship smartphones.

OnePlus is also offering discounts to earliest buyers among whom some might even get the new One for as low as \$1. But for that, you have to "smash" your old phone!

Despite featuring in a mid-range price category, the specs on the One are very high-end. The One comes with a 2.5GHz Qualcomm Snapdragon quad-core Krait 400 processor. It features Adreno 330 for high-end graphics and a 5.5-inch full HD IPS LCD display with 401ppi. The display panel is protected with Gorilla Glass 3 protection. It has plenty of RAM at 3GB and comes with 16GB and 64GB variants. Another killer-feature of One is its 4G LTE, HSDPA, GSM and CDMA support which makes it a world-phone. Also, it doesn't come with a stock or company UI. The One features CyanogenMod 11S which has been slightly customized for the smartphone. The ROM is based on Android KitKat 4.4 and comes with endless customization options that CyanogenMod has always been very popular for.

The OS features some cool features like SMS encryption, themes, app privacy guard, audio equalizer, file manager, enhanced camera app and plenty of gestures for launching various apps and

Mir Ubaid

mir.ubaid@thinkdigit.com

It's the phone of our dreams, given the impact it's speculated to have, after its launch very soon. Taking other Android smartphone flagships and shredding them to bits, in a matter of saying. If all it claims to have turns out to be true, then it could change our expectations from a flagship forever.

Founded by Pete Lau, a former Oppo Electronics VP, OnePlus has finally unveiled its Nexus-killer called One. Even though the specs of the upcoming smartphone have been known for a while, the company was yet to reveal its price. The startup has now revealed the price as well and looking at the announced prices of \$299 for the 16GB and \$349 for the 64GB models, One is clearly going to give major manufacturers a run for



NASA's global selfie

On World Earth Day, NASA posed a question to everyone. People responded with images. A LOT of them: <http://dgit.in/1vWN6Tj>



No fake moon landing

Here's definitive proof as to why the moon landing could never have been faked: <http://dgit.in/S2GB11>

Feature

Model/Specs	OnePlus One	Nexus 5	Samsung Galaxy S5	HTC One (M8)
CPU	2.5GHz quad-core Snap-dragon 801	2.26GHz quad-core Snap-dragon 800	2.5GHz quad-core Snap-dragon 801	2.3GHz quad-core Snapdragon 801
GPU	Adreno 330	Adreno 330	Adreno 330	Adreno 330
RAM	3GB	2GB	2GB	2GB
OS	CyanogenMod11S	Android 4.4.2	Android 4.4.2	Android 4.4.2
Display	5.5" IPS LCD (FHD), 401ppi	5" IPS LCD (FHD), 445ppi	5.1" AMOLED (FHD), 432ppi	5" Super LCD 3 (FHD), 441ppi
Camera F/R	13MP/5MP	8MP/1.3MP	16MP/2MP	5MP/4MP (Dual)
Storage	16GB/64GB	16GB/32GB	16GB/32GB (Expandable)	16GB/32GB (Expandable)
Battery	3100mAh	2300mAh	2800mAh	2600mAh
Price	\$299(16GB), \$349(64GB)	\$349(16GB), \$399(32GB)	\$699(16GB), \$800(32GB)	\$699(16GB), \$799(32GB)

functions. It also features Google Now which is activated by the voice command "OK, Google". Lau has said that OnePlus is open to working with other ROM makers in China, including MIUI (by Xiaomi) and Smartisan OS so that it can offer more options to its users.

One is even expected to satisfy camera enthusiasts with its 13MP camera which comes with a Sony Exmor IMX214 sensor with a 6-lens module and dual LED. It is capable of shooting 4K video and 720p slow-motion videos at 120fps. On the front, it features a 5MP wide-angle camera with loud stereo speakers from JBL. It also comes with three microphones featuring noise cancellation for excellent call quality.

The phone even comes in multiple back cover options.

The few things that the One is missing are a microSD expansion slot, USB 3.0 and Quick Charge 2.0. The design of the phone looks similar to Oppo phones like the Find 5. Lau says that his team has extensively

focused on each and every aspect of the smartphone. He says that his team spent almost four months just to fine tune the USB cable for the One in order to get the perfect texture, plug design and other small details. "You can use all sorts of marketing tactics, but when you're back to making a product, you must take users' actual needs into consideration," Lau said. "They are the ones who will actually use it, so they know best. You can exaggerate when you're selling a product, but when the buyers use it and are left disappointed, they'll still complain, right?" he says.

Let's compare the specs of the One with other high-end flagship smartphones to see how good it really is when it comes to



All hail the new king of smartphones!

specs on paper (refer to the above table). The One will be launched in late May and will initially be available in Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Italy, Netherlands, Portugal, Spain, Sweden, Taiwan, the UK, and the US. The company is yet to announce when and whether the smartphone will be available in India. If and when it does, rest assured that it will be lapped up with great gusto, given our country's great addiction to smartphones.



It's thin, light, and packed with features that will give other flagships an aneurysm

Tips & Tricks

Hidden things you didn't know about Whatsapp, live streaming, and your PC's cable management woes

**PS4 already profitable**

Sony's latest console is already profitable, expected to beat the sales record of PS2: <http://digit.in/RlyQ65>

Laptop hard drive woes, upgrading RAM, overclocking, and restoring Windows

We try to highlight readers' PC problems and help them with troubleshooting

Q Laptop HDD woes

Hi Digit,

I just want to know that laptop hard disk can be fixed or not. It takes a lot of time to start my laptop and writing and reading speed is around 2-3 kbps. Can you please try and tell me what is the reason for all this and how to solve the problem I'm encountering? Thanks.

—Ayush Agarwal

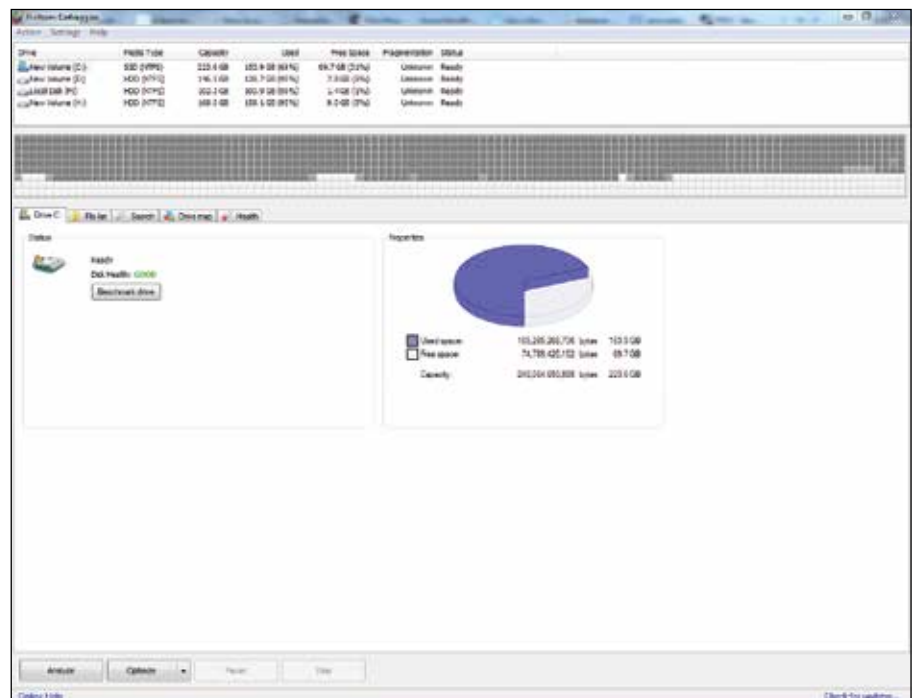
A Yes, laptop hard drives are the same as desktop hard drives and require just as much maintenance as their desktop variants to ensure a long working life and good transfer speeds. Generally, it is great to start off with a round of disk cleanup and removing unwanted programs (by uninstalling them properly, and not just deleting their installed folders). Then you'd want to run an anti-virus (download AVAST free edition, if you don't have one) and other anti-malware software to clean up any infections, if they do exist. Finally, run a good defragmentation software to sort everything in your hard drives physical sectors.

We do feel that the 2-3kbps transfer speed is a bit exaggerated but the above steps should help speed things up. Also, a remote possibility exists that your hard drive may conk off any time and this is the first signal of its oncoming death, so taking a backup of your data would be prudent and advisable.

Q Overclocking help

Hey Digit,

I have an issue with my trusty old laptop. It is a machine with the Acer's "InsydeH2O Setup Utility, V1.13" BIOS. I want to overclock my machine for slightly better performance, because I'm experiencing some performance bottlenecks.



Disk defragmentation is a tried and tested method of maintaining your hard drive's health

I hope I'll get help from you guys.
Thanks and Regards.

—Mukul Garg

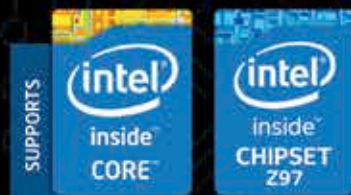
A Firstly, it isn't advised to overclock your laptop since they don't have adequate cooling to handle the extra heat that will be generated upon overclocking. Secondly, unless your BIOS explicitly allows overclocking it is not possible to do so. If your laptop uses an Intel processor then you need to have the appropriate chipset on your laptop. Overclocking requires access to a lot of parameters which are only found in the BIOS. Simple overlocks which involve changing the CPU RATIO will work if you've been given access to change the same. If you have a discrete graphics

solution then you can easily overclock it using MSI Afterburner or ASUS GPU Tweak. Again, doing so is not recommended for laptops and you do risk causing permanent damage to your device. Instead, you should focus on maintaining your laptop better in order to get the most that it can offer.

Q Upgrading RAM

I want to upgrade my laptop with 4GB RAM. Right now I'm having Acer Travel-mate 5744 laptop which is working fine, so I am planning to upgrade the RAM to its maximum capacity. I just found that it consists of RAM modules which runs at 667MHz. My query to you is this: Is it possible that if I pair 1333 MHz or higher frequency RAM with previous one will it

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IT managers decoded

Check out this hilarious skit to understand the funny side of life for an I.T. manager
<http://digit.in/1mhFqG3>



LG G3: Laser autofocus

After optical image stabilization, the LG G3 ups the ante by including a laser autofocus mechanism: <http://digit.in/S2uUYD>

work fine? Are there any issues that need to be resolved? Thanks.

–Chirag Nayyar

A If you've used CPU-Z or Speccy to check your RAM frequency then you've been given the base clock. That means your laptop currently has a 667x2=1333MHz RAM module. What you need to check is if you have one module of 4GB or two modules of 2GB each. In the former scenario, you'll have to buy another 4GB module and install it. In the latter scenario, you'll need to buy two modules of 4GB each. Moving from single channel memory to dual channel memory will profoundly increase performance which is why two modules are preferred over one.

Intervention required

I have screwed up pretty badly. The problem is with system images. It began when I tried uninstalling my Maya 2014 for a newer version. But it wouldn't uninstall despite my best efforts. So I just deleted the program folder and tried to install the newer version. That was really dumb of me and the newer version still gave an error saying uninstall the previous version first. So I devised a new masterplan. I had a system image of my C drive as well as the system reserved partition from the time when everything was working perfectly (made with Windows Backup and Restore). I figured why not just restore my whole C drive and get back to what it was. So I booted into my recovery disk and selected restore from system image. But that's when things started going really bad. That restore was taking extremely extremely long! I left it overnight (about 10 hrs) only to find about 5% progress. And soon after there was a long power cut and my PC was forced to turn off. Thus, now I have an unbootable pc. I still have that system image though. Is there any way I can restore my PC now (without doing everything from scratch) because I have customized it a lot and don't want to lose it. Thanks for bearing with me through this extremely long letter. Looking forward to your reply.



Restoring Windows from a messy installation is possible

Configuration -

- Intel core I7 4770K
- Asrock Z87 extreme4
- Galaxy GTX 780Ti HOF+
- Windows 7 Ultimate

–Rakshat Yadagoudar

A If you do have the system image then all you need to do is connect the Windows Installation Media (as a USB drive or as a disk in case you have two optical drives). Start up the installation process and when you arrive at the very first screen of the setup (it'll be all blue and have the "Install

device where the image is stored. Once the process is over you should have your computer in the same state as before.

The Saints have arrived!

I want to run Saints Row 3 on my Macbook Pro by lowering its fps. How can I do that? System Req:

- Processor 2.4 GHz Intel Core i5
- Memory 4 GB 1333 MHz DDR3
- Graphics Intel HD Graphics 3000 384 MB
- Software Mac OS X Lion 10.7.5 (11G63) Plz Help.Regards

–Debasmita Mandal

A Start the game and enter the "Options" screen. Click on the "Display" tab in the options screen. Change the preset from Ultra to the lowest possible option and then play the game. If you find the game to be too visually lacklustre then keep increasing the preset till you find a balance between graphics quality and playable FPS. That was the easiest way to do it. If you want to customise it to your liking then select Custom as the preset and take Anti-Aliasing all the way down. Keep Scene, lighting and shadow details to medium and switch off reflections,



Reducing display resolution can go a long way in making unplayable games playable

Now" button in the centre) click on the "Repair Your Computer" button on the bottom. This should bring up the "System Recovery Options" window. Choose the third option - "System Image Recovery" and browse to the optical drive or external

post-processing and ambient occlusion. If moving your configuration to the lowest possible settings doesn't work out then you can always reduce the resolution for reducing the graphical load even further. **4**

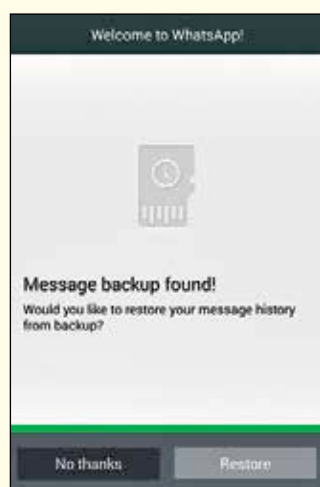
WHATSAPP

Everybody is on WhatsApp these days – from basic Symbian-powered phone users to high-end Android or iOS phone users. It has become a vital part of life, without which we can't go even for a day. Its increasing popularity prompted us to compile these few tips and tricks that will enhance your WhatsApp experience.

Recover deleted messages

WhatsApp has made recovering deleted messages very easy. The app itself automatically backs up your messages every day and comes with in-built restore functionality. For Android, the backup is stored on your SD card, while for iPhone this is stored on iCloud.

The restore functionality will help you restore lost or deleted messages. However, you'll need to uninstall and reinstall WhatsApp since there's no direct option to do this from the app. Launch the app after



Reinstall WhatsApp and you'll be asked if you want to restore messages

installing. Immediately following the mobile verification procedure, you'll be asked if you want to restore from backup. Choose 'restore' and you'll be



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Tips & Tricks has its own page numbers, and does not follow the rest of the magazine's page numbers. This is done to ensure that you can cut out and save T&T in a separate folder for later reference.

able to retrieve your entire chat history till date.

Schedule messages on Android

One of the interesting tricks that would benefit Android users is message scheduling. Message scheduling could have been one of WhatsApp's hottest features, but it's not offered by the messaging app. However, you can get it on any rooted Android device using a third-party application.

'WhatsApp Message Scheduler' is a handy tool that will let you do this job. Download and install it from <http://dgit.in/1sOWGTY>. Once you're done, open the app > Tap on 'Pending Messages' button at the bottom > New Message (Pencil icon) > Enter recipient (contact or group) > Write the message > Select date and time > Add

Your message will be listed under the Pending Messages tab and will be sent according to the set time. Other apps, such as

'Scheduler for WhatsApp' and '[WhatsApp] Scheduler Root Beta', let you schedule your messages as well.

Get WhatsApp notifications on PC

Now you don't have to wonder anymore about why your phone buzzed while you were working on your PC. You can get real-time WhatsApp notifications sent straight to your PC using a third-party app called 'Desktop Notifications' from Google Play Store. However, this trick only works for Android and there are no such apps for iOS yet.

To get the notifications on your PC, download and install the app from <http://dgit.in/1j532t0>. Open the app > Tap 'Accessibility settings' > Turn it on for 'Desktop notification applications' > Return to the app and install the extension/add-on (from the link mentioned under 'Browser Extension' in settings) on your Chrome/Firefox browser > Type

the unique alphanumeric code shown by the app into your browser extension > Tap 'Test'

This will sync all your phone's notifications to your PC. You can later filter the apps from app settings to include only WhatsApp. You can alternatively use the 'Pushbullet' app to do the same thing.

Read messages without changing the Last Seen timestamp

This trick will let you see all your received messages without changing the 'Last Seen' timestamp. The timestamp will display the old time when you went offline to others. The sender will think you're not yet online and you can easily ignore replying to him at that moment.

To do this on iPhone, first entirely close WhatsApp (don't just minimise it). Then tap the WhatsApp icon and before it connects just hit the 'Home' button. Remember: you have to be very fast here. This will download all the messages. Wait for a while and turn off mobile data connection or Wi-Fi (depending upon your connectivity). Launch WhatsApp and you'll get all your new messages there.

Doing this on Android is very easy. After you've received a message, just turn off the data connection or Wi-Fi and launch WhatsApp. That's it! This trick works for WhatsApp on Windows Phone as well.

Create a fake conversation

If you're a prankster and wanted to do this to friends for a while now, this tip is your dream come true. You can create a fake conversation using Android app 'Whatsaid'. It will let you create a customised WhatsApp screenshot with everything to look the way you want it to. Download and install 'Whatsaid' from



<http://dgit.in/1texyrS> and you're good to go.

Run multiple WhatsApp accounts on the same phone

For this, you need a rooted Android phone with Titanium Backup app installed. To do it, open Titanium Backup > Tap 'Switch Profile' > Select 'Create a new data profile...' > Enter a name (this will be your administrator profile with current app settings)

Again, tap 'Switch Profile' > Select 'Create a new data profile...' > Enter a name (this will be your second profile for new WhatsApp). Now again, tap 'Switch Profile' > Select the second profile > Go to Backup/Restore tab > Search for WhatsApp in the list > Long press the icon > Select 'Enable multiple profiles for this app'. That's it. Launch WhatsApp and register with a new number.

Track last seen timestamp without being online

Sometimes, you'd like to check if a friend is online, but want



You'll see the last seen timestamp of your contact without going offline

to do surreptitiously without changing your timestamp. You can do it using a third-party Android app called 'WhatsApp Spy 007'.

Download and install it from <http://dgit.in/1gijJq0>.

To do it, open the app > Choose your connection (Wi-Fi/Mobile Data) > Tap 'Contact' > Select the contact whose timestamp you want to see. Wait for some time and you'll see his/her last seen timestamp.

Stop automatic media download

WhatsApp automatically downloads media content as you get it. While it's a good feature, this may at times irk you, say, if you're on a limited data plan.

To do it on Android, go to WhatsApp > Settings > Chat Settings > Media auto-download > Unpick the media you don't want auto-downloaded under 'When using mobile data', 'When connected on Wi-Fi' or 'When roaming' options.

iOS users, to disable auto-downloading photos and videos to your Camera Roll, go to WhatsApp > Settings > Chat Settings > Switch off 'Save Incoming Media'.

Use extended privacy settings

WhatsApp recently added privacy options for both, iOS and Android users. On Android, you can check them by navigating to WhatsApp > Settings > Account > Privacy. Here, you can choose from options such as 'Everyone', 'My contacts' and 'Nobody' to show your last seen timestamp, status and profile picture.

On iPhone, you can check these options by navigating to

Last Seen	Everyone >
Profile Photo	Everyone >
Status	Everyone >

Choose who can see your status, last seen timestamp and profile pic

WhatsApp > Settings > Account > Privacy

Password protect WhatsApp

Google Play Store offers many apps to protect your applications with a password. You can use any of them for an additional layer of security for WhatsApp. Some good apps among them are: 'Messenger Lock', 'Lock for WhatsApp' and 'Messenger and Chat Lock'.

Unlike Android, there are no direct working apps available to password protect WhatsApp on iOS. To do it on iOS, you need to have a jailbroken device. Once you're jailbroken, there are plenty of Cydia tweaks that will let you password-protect your applications. Some good ones among them are: 'AppLocker', 'Lockdown', 'Lockdown Pro' and 'iAppLock'.

Prevent media from appearing in Gallery/Camera Roll

Whenever media is downloaded, it automatically appears in the Gallery or Camera Roll. While this is handy, you may not appreciate this feature.

To prevent this from happening on Android, using a file manager navigate to '/WhatsApp/Media/WhatsApp Image/' and create a new file named '.nomedia'. You can also do this from your computer. Similarly create another file with the same name in the WhatsApp Video and WhatsApp Audio folder.

To prevent media from appearing in Camera Roll on

iOS, go to WhatsApp > Settings > Chat Settings > Turn off 'Save Incoming Media'

LIVE STREAMING

We'll be using Open Broadcast Software (OBS), a free-to-use open source software for video recording and live streaming to help you set up your first live stream event. In this Tips and Tricks tutorial, you'll learn how to upload to Twitch.tv and YouTube using this software. Download OBS at: <https://obsproject.com/>

Tweak the basic settings

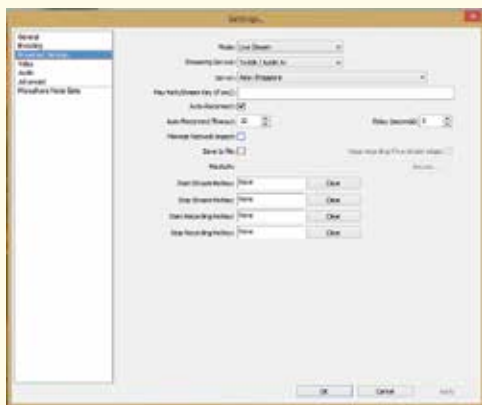
Before you begin, we suggest changing the settings in the OBS software to fit your requirements. You'll find the settings button on your first screen.

Navigate to Settings > Encoding > choose Max Bitrate in kb/s. Your streaming video will use this encoding bit rate. We recommend keeping it near to the upload speed provided by your ISP. If you have a 2Mbps bandwidth, then keep 1500kb/s as the maximum bit rate. Fidget with the audio encoding only if you need to. We would recommend leaving it as it is. Once you're done, click 'Apply'.

Live stream to Twitch.tv

Select the broadcast service

Now, navigate to the 'Broadcast Settings' tab located to the left. The options here will let you select the service (Twitch, YouTube, DailyMotion, Hitbox, etc) to use to broadcast your live stream. Since these tips and tricks are dedicated to live streaming on Twitch, we'll select 'Live Streaming' in the Mode dropdown box, followed by 'Twitch / Justin.tv' in the Streaming Service dropdown



Paste the Stream Key in the field

box. Then select the server closest to your location in the Server dropdown box.



Set a stream key

A 'stream key' is a unique key for any channel that will let you broadcast to that particular channel. To get a stream key, go to twitch.tv/broadcast and sign up there using your email address or Facebook account. Once you've signed up, you'll be provided with a stream key.

Copy the key to the Stream Key box in OBS Settings. Leave the rest of the controls as it is and click 'Apply'.



Select video and audio adapters

Then navigate to the Video tab and select the video adapter that you use with your monitor, E.g. Intel HD4000, GTX 680 etc. Match the base resolution to your monitor's default resolution, use resolution downscale if your monitor doesn't have 16:9 aspect ratio and make sure your FPS is set to 30.

Then navigate to the Audio tab and select your audio adapter. If you'll be speaking on the microphone, there's a way to multiply your microphone volume level so that the audio is clear. We recommend not multiplying the Desktop Boost or else it would overpower the sound

and become terrible. Then click on 'Apply' and 'OK'.



Create scenes

Now you'll return to the main window. Here you'll see two boxes: Scenes and

Sources. Scenes will let you add different scenes – a precompiled set-up of video inputs and images – such as gameplay, webcam person, BRB screen etc to your broadcast. Sources will let you select from options such as webcam, game, image, video etc.

To create a new scene, right-click on the scenes box > go to Add Scene > *Give it a name* > OK.



Stream a video from webcam

In case you're planning to deliver a speech over the internet, OBS will help you stream videos directly from your webcam. You can do this by creating a new scene followed by right-clicking in the sources box. Then go to Add > Video Capture Device > *Enter a name* > OK > Choose your webcam under Device dropdown box > Check 'Custom Resolution' > Choose resolution as per your requirement > OK.



Preview your stream before broadcasting

You can also preview your stream to see how it looks while broadcasting. To do this, click on the 'Preview Stream' button located on the main screen.



Stream your desktop

With OBS, you can also broadcast your desktop. To do this, create a new scene, then right-click in the sources box and go to Add > Monitor Capture > *Enter a name* > OK > *Keep the default settings* > OK.

This will broadcast your current desktop and all activity that occurs here. To see how it looks, you can at any time click on 'Preview Stream' button.



Stream an image from your system

To stream an image, create a new scene and right-click in the sources box. Then go to Add > Image > *Enter a name* > OK > Browse > *Select an image* > OK. This will add an image to the scene.



Stream a window along with webcam

You aren't restricted to streaming only one source at once. You can stream from two or more sources simultaneously. For instance, let's stream your desktop along with your webcam. To do this, create a new scene and add 'Monitor Capture' and 'Video Capture' source in the same scene.



Re-size streaming windows

If you're streaming from two sources simultaneously, it's possible to orient the window the way you want it to appear. Two windows will overlap each other and it's possible to change the size of the overlapped window. This can be done by clicking the 'Edit Scene' button and then dragging the window from the corners. You can also reposition the window by grabbing it and dragging it to a side.



Stream a gameplay

You can also stream an entire gameplay. To do this, launch a game and minimise it. Then in OBS, right-click on the sources box and go to Add > Game Capture > *Enter a name* > Select your game from the dropdown box > OK.



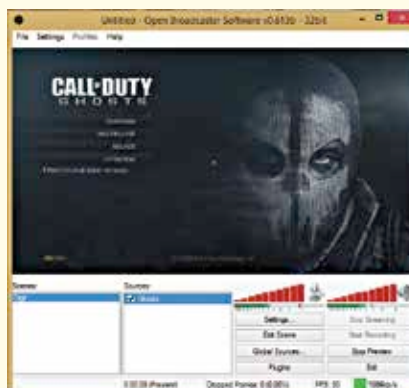
Adjust volume

It's possible to adjust the volume of the gameplay and microphone while you're streaming both of them simultaneously. On the main screen, you'll see two volume controls – one for microphone and another for speaker. Adjust the speaker and microphone volume according to your requirement.

Live stream to YouTube

Live streaming to YouTube using OBS isn't as easy as it is on Twitch.tv. To set up a live stream event on YouTube, you need to create a new live event on YouTube. First, sign in to your YouTube account. Click on the Gear icon (you'll find it next to your name in the top-right corner). Then go to Video Manager and in the left panel, click on 'Live Events' and enable live streaming.

Note: If you don't see Live Events under Video Manager, then you need to register as a YouTube partner. This is completely free. If you're broadcasting a live event for the first time, you might need to verify your YouTube account with a



Preview of COD GHOSTS gameplay



verification key that is sent as a text message to your phone.

Once you're verified click on 'Create a live event' > *Give it a name* > Schedule the date and time > Add Tags > Choose access type (Public, Unlisted, Private) > Select Custom (more encoding options) under Type > Create Event.



Tweak YouTube's Ingestion settings

In the Ingestion Settings tab, select a thumbnail for your live stream > choose 'Basic Ingestion' > Select a bit rate according your requirement considering your upload speed > Choose 'Other Encoder' and select from the more options that appear below.

Copy the unique 'stream name' that you'll see and go back to OBS. In OBS, you need to change the Broadcast settings. To do this, click on Settings > Broadcast Settings > Choose 'Live Stream' as Mode > Choose 'YouTube' as Streaming Service > Choose 'Primary YouTube ingest server' as Server > Paste the stream name in the Play Path/Stream Key field > Click 'OK'.



Control your stream from YouTube's Live Control Room

Click on the Live Control Room tab and you'll see 'No Data' because nothing is streaming at the moment. Go to OBS, start streaming, and then return to YouTube and wait until you see Stream Status as 'Good'. Click on 'Preview' followed by the Play button of the YouTube player. You'll now see the preview of what you're streaming. If you're all set, click on 'Start



Copy the Stream Name to the Stream Key field in OBS

Streaming' and your stream will be live.

CABLE MANAGEMENT

Pay attention to the cables inside your PC. Here's how



Routing mobo cable

The first cable that you should route is the motherboard cable which is the thickest and ugliest among all the other cables. Take the cable > pass it through the lowest routing hole next to your power supply > carry it straight up through the back of the motherboard tray till right where the 24-pin port exists on your motherboard > pass it through the routing area next to the port > connect it in. Make sure to not make any twists or loops on the motherboard cable because that would become very



This is how the back of the case should look like.

thick and wouldn't let you close the side panel.



Route CPU cable

Pick out the CPU power cable > pass it through the hole which you used for the motherboard cable > prop-up the cable at the back > align it next to the CPU cutout area > bring

it out to the other side of the case through the routing hole near the 8-pin CPU power port > connect it to the port. This way of routing the CPU power cable ensures that it stays out of the way of the other cables inside the case and is easily distinguishable.



Route GPU cable

Take a look at the PCIe x16 slot on your motherboard and keeping that in mind > connect the PCIe 6-pin or 8-pin power connector to the PSU > pass cable through routing holes near the PSU > don't overlap them over the motherboard power cable and use the routing hole to pass the cable through to near the area where the GPU will be installed. Install the GPU at the very end of the entire process as this gives you more room to work around.



Routing SATA power and SATA data cables properly

Take the SATA power cables > connect

them to the PSU > group them together > pass them through the routing holes > align the cables at the back of the tray taking them away from the cluster of PCIe and motherboard cables towards the drive cages > connect them to the drives. As for SATA data cables, it's best to group them together one above the other since they're flat and pass them through the routing holes and connect them to the drives. In case of excess cable length, fold the cables and tuck them behind the drive cages away from sight.



Fan, case cable etiquette

If you have installed the fans in the right places, group their

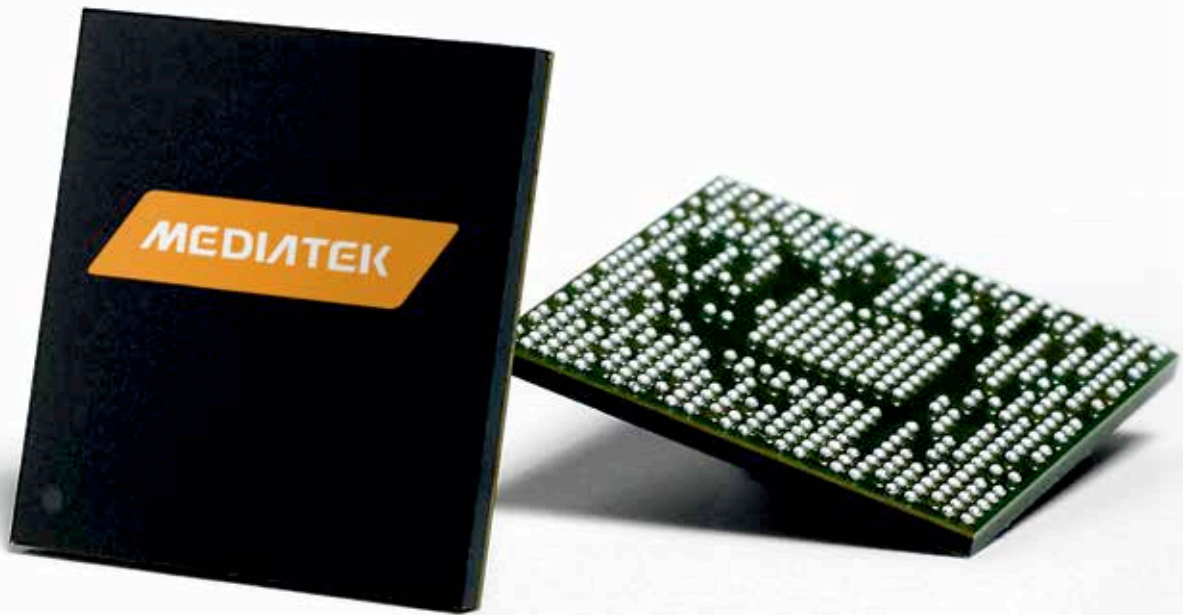


For some inspiration

cables according to their placement for example: group cables of the front fans together and the rear or top fans together. If the cables are long enough to reach the motherboard tray, approach through the shortest path and connect them to the ports through the back of the tray. In case the cables are short, you'll have to use the fan adapter which is usually included with the fans and connect it to the molex power cable of the PSU. Connect the cables of your PC case after this, follow the same grouping process and connect them to the ports on the motherboard after you've passed them through a routing hole right next to the front panel connector ports.

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Android v4.2.2 "Jelly Bean" and v5.0 "Key Lime Pie"

Chromium browsing experience on mobile phones/tablets

Multiple-window, laptop-like experience on mobile devices

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Thin PCs: Need of the hour

We talk about the latest PC trends that are emerging at the workspace, and how they are making a lot of sense

Mxit Interview

We chat up with the founders of this new messaging app and try to decode its mantra

FUTURE TECH CAREERS

We try gazing into the crystal ball to tell you about interesting career options that you need to prepare for right now. The future is going to be increasingly digital, and techies will be in huge demand, more than ever.

Ketsan C

readersletters@tbinkdigit.com

One are the days of cliché jobs like doctors, engineers and lawyers, which was the pool of career choices your parents wanted you to select from. Technology has expanded like never before in the past few years and the speed is only increasing at a scorching pace. This advancement in technology will undoubtedly spawn never-thought-of-before tech careers. Take a look at some tech careers that are bound to become hot picks in the near future. Some have already arrived.

Chief Digital Officer

A Chief Digital Officer (CDO) is a job profile that has sprung up in the last few years and is already making serious inroads into the corporate world. What's more, it's also stated to be the fastest path to becoming the Chief Executive Officer (CEO) of a company. And if you thought that this job profile isn't in the limelight, then think again; the

State of New York, Harvard University and the Metropolitan Museum of Art all have their own CDOs.

The role of a CDO is ever-expanding, but the main focus of the job is to convert the analogue processes/components of a company into digital processes. This is done to increase their accessibility and to make more sense of a mountain of data. Basically, the CDO is responsible for the digital customer experience of the company wherever it may apply in a business. Your work profile may however depend on the company you're working for; E.g. the role of the CDO of the Metropolitan Museum of

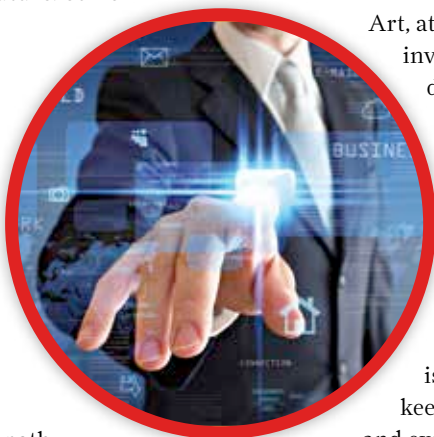
Art, at the time of joining, involved leading the digital media department's initiatives related to creation of documentation and interpretive material on the museum's collection. So you can say that a CDO is someone who, keeping the marketing and experience perspective in mind, is responsible for the IT implementation of an initiative. S/he won't be concerned with the technical aspects of the implementation but will

be concerned with what information is put across, how it is put across, how it is used, the delivery mode used and all semantics related to the experience of the consumer of the digital data.

To become a CDO, you must possess a good understanding of Marketing along with the capabilities of different technologies. The CDO acts as a bridge between the Marketing department and the IT department.

Artificial Intelligence Programmer

Face it, many of us geeks daydream about the ultimate Artificial Intelligence (AI) personality (Commander Data of *Star Trek*, anyone?) as much as we dream about ET contact. Keeping Hollywood doomsday scenarios aside (*Skynet*), AI is set to rule the future world for the good of mankind. In areas where a myriad of critical intelligent decisions are required, we can no longer depend on simple computer programs that follow a set of rules to take decisions. We need software that can think and take decisions. So, if you're thinking about a career in AI Programming then you may just be on the path to becoming a hot commodity in the market. The applications of AI Programming are many, to name a few: Entertainment, Safety, Military Operations (The human race is intelligent





enough to keep AI away from nuclear armament control, so don't worry), etc.

In the entertainment industry, gaming is one area that's seeing large application of AI programming. It's no longer enough for the consumer to play games in which the enemy's moves are predictable. AI in Game Programming ensures that the enemy becomes challenging and life-like when playing against. For example, if you've cornered an artificially intelligent enemy he wouldn't simply continue fighting. He'd use a different strategy against you – maybe pretend to die, wait for you to get close and then waste you with a head shot (This behaviour would be based upon your in-game behaviour of spray-painting enemies with your symbol or name).

A degree in Software Programming, more specifically Game Programming, should nicely land you a plum, futuristic job.

Another geek-favourite application of AI Programming would be in the field of Robotics – introducing to us the futuristic job of Robotics Scientist. Robotics has applications in a plethora of areas, limited only by our imagination (think: nanobots). If this branch of technology excites you, then you should definitely plan for a Masters degree in Robotics Engineering.

Facial Recognition is another area where artificial intelligence can be useful. Everyone, from commercial enterprises to the government and law enforcement needs this person identification/verification system. The tech has gone beyond recognition of geometrical patterns of a person's face and is now able to determine age and whether he's in disguise, among other things.

It doesn't take a genius to perform searches on the internet, but this wasn't the case a few years ago. We are where we are today mainly due to artificially intelligent software that determine what

you're actually searching for even though you don't type in the right keywords. In the future, the search engine will give you results for terms before you even think about searching for them.

This is possible since the AI of the search engine would have determined what you were working on based on your previous search and given you results based on what it might have thought is useful to your project. A Ph.D in AI is the way to go if you want to be a search engine AI developer.

At the end of the day, the biggest employers of AI will be the government and the military. This is because data explosion is making it simply impossible for government-employed human operators to classify and sort data – this is where 'thinking' computer systems come to the rescue. As for the military, AI will be involved in sorting out defense intelligence from the data it receives and in the use of smart weapons and gear. If you want to work with the government or military, you'll need to study Software Engineering with a focus on AI.

Virtual Reality Tech Support

It's every geek's dream to one day see the holodeck become a reality. For the moment, we seem to be light years away from that dream but we're definitely racing towards it.

Virtual Reality (VR) – or Virtual Environment (VE) as the scientists of today prefer to call it – is a computer-generated environment that simulates a real-world environment or an imagined one and gives the feeling of being physically present in that place. A VR system can simulate visuals, sounds, smells,

touch, etc. Currently, a virtual reality experience is delivered through displays on screens or through special headsets that give the feeling of being immersed in the environment.

The technology has application in Education, Medicine, Military, Government, Entertainment, etc. Its usage is only limited by our imagination. It's undoubtedly one of the technologies that will become prominent in the near future. Currently, there's a shortage of VR specialists who can function as tech support and hence this promises to be one of the lucrative career choices of the future. The range of issues solvable by a VR tech support would range from correcting VR environment errors to actually immersing themselves into the VR environment to help out a customer stuck at some point in the VR simulation.

Depending on the area of the VR application, educational qualification here would bestow you with a mix of skills. Some of the subjects you'll need to study would be digital modelling, computer-aided design, software development, transgenerational design, virtual environments, cyberpsychology, morphing signals, artificial intelligence, vision and cultural studies, and spatial culture. Considering the diversity of the subjects, it's best to enroll for courses specifically designed for Virtual Reality.

A number of foreign universities are beginning to include such courses.

Dream Specialist

Here's something for *Inception* fans – a job in dream specialism. This is one of those careers that might take off with a bang once neuroscientists perfect the art of enabling a person to control his/her dreams (lucid dreaming). Stimulating the brain during sleep with specific electrical frequencies makes you self-aware inside your dreams. Imagine the possibilities! In the future, however, the job of a Dream





Tech sector needs women

Despite entering the 21st century, it's the same old story. Women employment in tech jobs is way too less. <http://dgit.in/1ocG1w6>



Treat career like a startup

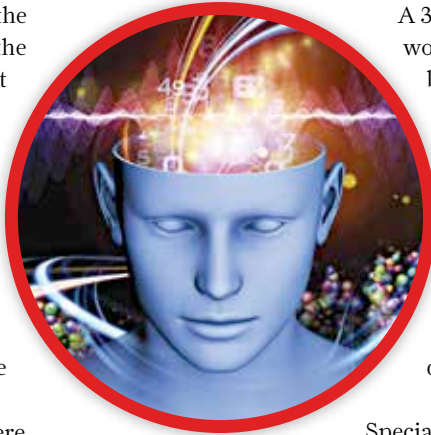
An interesting advice on how to treat your career as a startup right from the beginning. <http://dgit.in/1mdQdRI>

Specialist won't stop at inducing lucid dreaming in people. With advancements in neurosciences and computer technology, we may be able to create dream 'programs' for the brain. So far, we have the technology to interpret brainwaves to control devices. It won't be long before the signals become a two-way communication and we're able to send specific 'dreams' to the brain (did someone say *Total Recall?*).

There's no doubt here about the qualifications needed to become a dream specialist. You'll need to study Neurosciences. In the future, though, we may even have devices that induce lucid dreaming, in which case all you have to be is a damn good script writer with some knowledge of human psychology.

3D Printing Specialist

3D Printing has recently become affordable to the general public thanks to all the Open Source 3D printers out there. This is one area set to become a big industry in its own right in the near future. Already, 3D printing companies are sprouting up around the globe. What makes 3D printing such a success is its versatile application. There's practically no limit to the applications of 3D printing – from printing simple jewellery and kitchen items to printing food and robots. Medical sciences have embraced 3D printing in ways unimaginable before; from printing organic replacement ears to metallic jaws, the list keeps growing. Even NASA is investing in advanced 3D printer technology to print food for its astronauts (double cheese burger, anyone?).

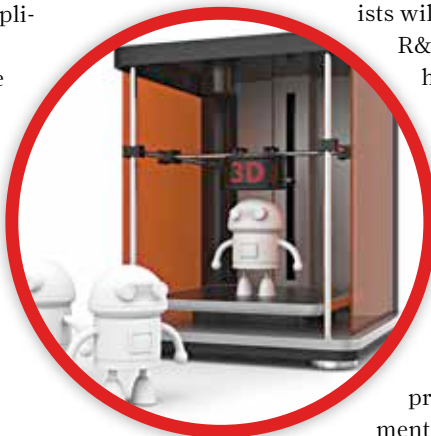


This advancement is spawning a specialised job role, that of a 3D Printing Specialist, further dividable into sub-fields mentioned below.

A 3D Design Specialist would be responsible for bringing product ideas to life. To be a 3D design specialist, one must study 3D Designing. An education in creative arts followed by a 3D Computer Design course should do the trick.

A 3D CAD Modelling Specialist's role would begin where the 3D Design Specialist's job ends – that is, after the making of a product's 3D computer model. The 3D CAD Specialist would convert a 3D product's design to a blueprint for 3D printing. Factors such as size, geometry, material to be used, etc. would apply here. To become a 3D CAD specialist, one would require a regular engineering degree followed by a course in 3D CAD design.

The 3D Printing industry will need visionaries, and this is where 3D Printing R&D Specialists will come in. 3D Printing R&D specialists will be hired by 3D Printing companies to come up with new products, ideas and innovations. These specialists will need to understand technology capabilities, consumer products and development cycles, in addition to an understanding of the budget to keep innovating at the lowest costs possible while still innovating brilliant marketable products. While technical



capabilities here are not a necessity, management skills are – in fact, they're the main requirement and need to be updated with the latest technology. An MBA should help here along with a deep understanding of technological advancements and their applications.

Then, there will be niche industry-specific 3D printing specialists who will possess skills that the industry is based upon. E.g. Medical knowledge in the medical industry or knowledge of defence equipment (more advanced than the 3D printed gun) in the military.


Privacy Consultant

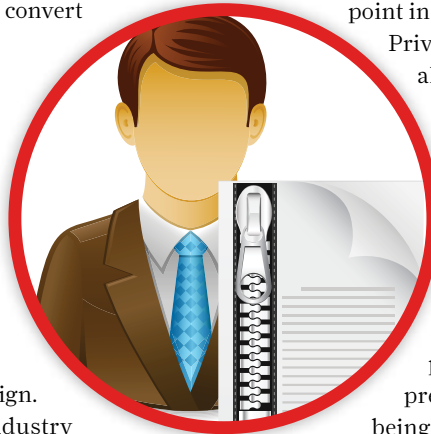
A relatively new job, a Privacy Consultant has multiple functions. S/he can help someone 'disappear' (within legal boundaries, of course), leaving no trace of information which might point in their direction.

Privacy consultants can also be hired by large organisations whose services/products deal with clients' personal information. They'll ensure that the companies work within the parameters of privacy laws and also prevent client data from being misused in ways not

thought possible (Remember the app that used to point out the location of girls near you?). Here, the privacy consultant will have an understanding of the intricacies of data as well as an understanding of the law.

This will be a very lucrative field as the laws regarding privacy are becoming stricter, and companies will hire Private Consultants to ensure that they stay on the right side of the law when dealing with client data. It's preferable here to have a degree in law with an understanding of information technology, social media and devices.

These new career options of the future will separate you from the rest of the crowd and put you in an altogether different league of specialists. So what are you waiting for? Start planning. 





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IS THIN IN?

If investing in a lot of hardware doesn't seem the right at the moment then thin clients might be the right thing for you



Mithun Mohandas
readersletters@thinkdigit.com

This might probably be the first time that you are hearing of thin clients. The concept is anything but new, it's just that it's getting more popular by the day. A regular computer has a processor, motherboard, ram, graphics processing and more hardware packed into each machine. A thin client is a scaled down version of the same except most of them don't have the concept of local storage. Moreover, one thin client can support multiple monitors, so each monitor becomes a workstation. The client-server model followed in a thin client system leverages the processing power of the server to handle all workloads of each client connected to it.

If you've read anything about the history of computers then you'd recall that UNIX based operating systems had the concept back in the early days of computing where one computer would be powering multiple terminals all over a campus or throughout a single building. There was a simple facet to this type of an setup and that was to make efficient use of computing power. Having proper computers would have been worthless since they weren't going to be used 24x7, so by sharing resources across multiple terminals the total cost of ownership gets reduced significantly, and computers weren't exactly cheap back then.

As with any system, there are numerous advantages and disadvantages of such a system, before converting your work environment to a particular model

one needs to perform a proper cost-to-benefit analysis. Hopefully, the following points will help you in your decision.

Advantages

Low cost – The primary driving factor here would be cost of ownership. Since you don't need to invest in high-end hardware for each station you end up spending less. This is, however, greatly dependant on what kind of work is being done at your establishment. If certain workers need to be given extra security or the work they are doing is of a far greater importance, having a single dedicated computer does make sense. Thin client systems also consume far less power individually, which when added up reduces the overall power consumption in the work area.

Quantum computing playground

Google researchers unveiled the first browser-based, GPU-powered Quantum Computing Playground. Go take a look, it's a lot of fun: <http://dgit.in/1jKbMum>



No more power cords

A new type of supercapacitor could make it possible to design electrical devices not governed by cords, external adapters: <http://dgit.in/1onxVyg>

Smart SoHo

Scalability – As and when new users arise, getting them a new workstation only requires you to purchase a new terminal and connecting it to the server. There is no need to set up software or perform any of the actions that are normal when getting a new machine. Think of it as a plug-and-play technology. And when the processing power at the server is lacking you can easily upgrade the server alone and save money while increasing total processing capabilities of the entire system.

Security – You can specify which station gets to access what and then you can have inherited permissions for different classes of users. Most of the operating systems managing such systems are based on Linux which ensures a far lower chance of malware infection.

Maintenance – As mentioned earlier, most of the modifications need to be made at the server so the effort and time needed to sort things out is greatly reduced. Since most of the work data is stored on the server, any station can be used by any



Tiny but not low on power. Oh no, siree!

employee and the experience is the same. This way if individual clients are being serviced then the worker can be moved to

a different client and there is no down-time at all.

Disadvantages

Single point of failure – Unless you have a redundant server acting as a backup for your primary server you risk losing a lot of productivity if the server conks up. The server is that single point which is the backbone of the entire system.

Universal restrictions – Any restrictions placed on the server affects all. So if at all a certain website gets blocked and later on the need to access it would mean having to modify server security rules which might become cumbersome. There are media heavy applications and websites which might slow down the server if many of the connected clients try to access at the same time. This causes problems for every client connected to the server.

Low latency network – Pivotal to a client server model is that the connection between the client and the server be as smooth as possible. Connecting over a

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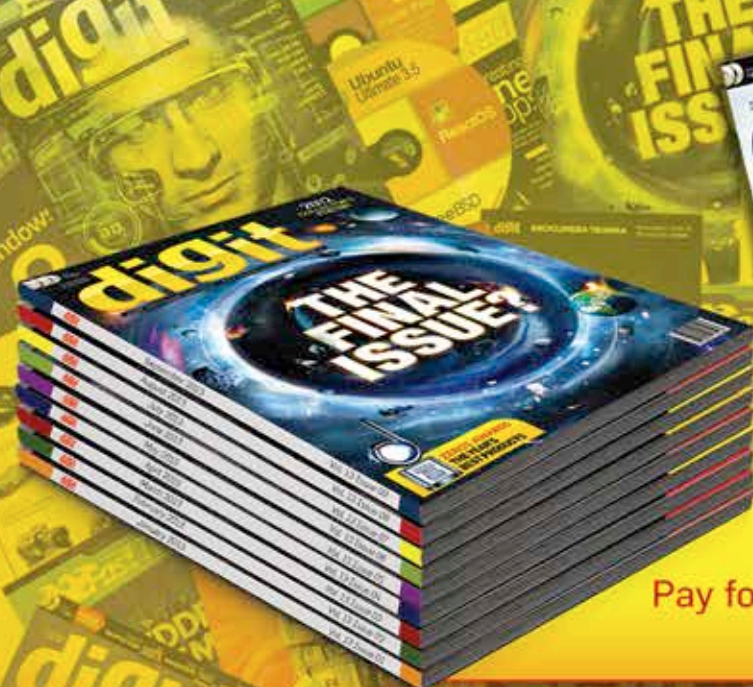
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The myth about robots

A thought-provoking on what little we know about bots is deep rooted in the make-believe: <http://dgit.in/1tsWBHL>



History of Rubik's cube

Trace the very beginning of the history of the Rubik's cube. Did you know it was never meant to be a toy? <http://dgit.in/1onCTuW>

Smart SoHo

wired connection is simple but when wireless communication is to be considered then the investment into routers and access points to ensure every client is enjoying a low-latency connection increases.

Cost of conversion – If you choose to go with one particular model and then wish to shift to another, it isn't always the matter of installing a software and getting it over with. A thin client system requires a beefy server and such hardware isn't exactly cheap. If converting, a proper cost analysis must be done in order to ensure that you don't end up losing money instead of saving it in the long run.

Usage scenarios

Most applications of thin client systems revolves around prioritising who gets what amount of processing power allotted to them. A simple approach is to have employees who aren't performing processor intensive tasks use thin client systems while those who need more power be given individual systems. Then there are systems which don't require the need for any individual systems like schools. Every client can be a thin client and all data can be stored on the server with ease. Microsoft advertises its Multipoint Server for this purpose since it gives students the familiar Windows interface but allows the educator to have complete control over everything that goes on in the class room. The educator can decide what to project onto individual screens and also monitor what each student is working on at the moment.

Workplaces that primarily operate via a browser like all data entry operations don't require machines that boast of moderately powerful hardware. Thin client systems are perfect for such operations.

Similarly, when employees have to perform on-site work then can simply carry a wireless terminal with them that can be

used to connect to the server in the office. These wireless terminals often use SSDs and have no moving parts which makes them quite rugged. However, these mobile terminals are plagued with connectivity issues no matter which form of wireless medium they are on.

Do you need to invest in thin clients?

At the moment customers don't have much choice when it comes to picking a thin client system since very few manufacturers offer these devices. The clients are often powered by a Celeron or Atom processor and have multiple display ports



Thin and zero clients are catching up fast

attached to it, each enabling one station. These devices are quite underpowered and the average worker might find the experience cumbersome and a good portion of the IT administrator's time would be spent educating employees over and over again.

A different approach can always be undertaken which doesn't hold true to a thin client system's definition. The old client server model is still better. The server in this case is beefy and each individual client is moderately powerful. But the server isn't a single computer

but a cluster of many machines that portrays itself in a single image. The computing power of a cluster allows users to run intensive operations on the cluster while the individual machine is used for something else. This approach works way better than thin client systems across many aspects and can service a lot many more employees with minimal investment. As and when more processing power is needed more computers can be added to the cluster. However, power consumption is a huge drawback of this system. This model is best suited for the majority of the work scenarios while thin clients are suited for low power consumption and low processing power needs.

PCoIP

One step ahead of the thin client technology is PCoIP. It's a proprietary technology but mainstream brands have come out with products for the same. Another term used to describe this is "Zero-client" technology. The setup consists of a monitor which has one ethernet port and two USB ports for a keyboard and a mouse. Extra USB ports or card readers have been seen on certain models. The device uses PoE (Power over Ethernet) to deliver up to 40W which helps power the display and the hardware connected to the device but most of the devices we've come across does make use of a separate power connector. It's simply a remote desktop with all the processing happening over at the server. Video and data is channeled via ethernet which has more than enough capacity to handle the two. QoS settings enable a smooth display experience.

Thin and Zero clients are catching up given all cost benefits they offer, let us know if you are thinking of adopting the same for your SOHO.

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World's worst airplanes

History of aviation is littered with horrible plane ideas. Here are the worst airplane designs: <http://digit.in/1vR8kC8>

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Mxit Well

In conversation with Sam Rufus Nallaraj, Francois Swart and Roger Grobler about the future of Mxit – a social networking app with a twist

Prakrit Dhondiyal

readersletters@thinkdigit.com

What do you think differentiates Mxit from the other apps other than the fact that it runs on feature phones as well?

SRN: That is in fact fundamentally a huge differentiating factor, specially for us, in India. Market wise, if you see the potential, out of 900 million users in India, there are barely about 185-200 million on Smartphone. But the untapped potential that is there is close to 550 million and the rest about 150 million are the 'dumb' phones. But the remaining 500 million phones have 2G data access and the ability to download Mxit and start chatting. So we believe that it is fundamentally a huge market for us.

But there are other apps out there, like Nimbuzz and a few others, that work on feature phones as well, aren't there?

Francois Swart: Well, there's only really Facebook that parallels us on the amount of feature phones that we work on, because we've been there right from the beginning. So that with all old models run all the way from the old feature phones to the new smartphones. Another thing that we like to differentiate ourselves is obviously localness. A part of that is that we want to be in 11 official languages in India. We've launched with Hindi, but in the next six months we want to add another 10. And then the big component: we say we are a social network but we've coined the phrase 'Social Squared'. It's not just chatting, but it's also the social things we do around education,

health care and counselling apps we have on Mxit. So inside Africa today, we've got around 27 million counselling sessions on Mxit. Where users have been able to speak to a social worker/counsellor on the other side. For rape counselling, for abuse, for drug abuse, for teenage pregnancy. So we believe it is a big differentiator or differentiating factor to other social networks out there. The other thing is that you also have the ability to stay anonymous on Mxit. So when it comes to the social side of things, people don't like to open up when they know that you're revealing your true identity. So in the Mxit environment, you can be anonymous and communicate with that



Sam Rufus Nallaraj

person anonymously and get counselling services. So we believe in the counselling and we want to try that in India too. It gives us a local flair and actually puts us on the ground in the communities – Not on the ground with a clipboard, but a mobile phone that gives us real leverage.

P: Where do you see Mxit five years from now?

SRN: Personally, I'm very excited about our AI bot, the integration of what it can do and achieve. Secondly, the shift to wearable technology in five years from now. We want to be geared up for that kind of technology which has a different scale of integration. So we want to be present there at those key areas.

FS: I think from a geographic perspective, India is our spring board into Asia. And



Francois Swart

there's a massive market there. Now if we do well in India, then all the countries around here are our natural next target. From an African perspective, Nigeria is a big target for us. India was a part of BRICS and Nigeria's similarly a part of MINT – Mexico, Indonesia, Nigeria and Turkey. Our priorities are quite different from other social network approaches, because we believe that localization is important and to be able to do localization properly, you need to be on the ground. So we're focusing on India and Nigeria for our expansion plans, at this stage.

Roger Grobler: The difference between the Indian market and any other market is probably that there are at least a billion people that are not connected to the internet, today. And the only way we're going to get them connected is via



Roger Grobler

mobile phones. These mobile phones are largely already in their hands – so they've got the internet in their hands, but they're not using it! It's natural for most people. You want to find something, you Google it, you get a bunch of links, you decide what you want to click on, you get to a structured website. If you've never done that before it's not

all that obvious. What we think MXIT provides is quite a human interface to the internet. It's not that chaotic as the internet is at the moment, and from a five-year perspective – it is growing at an accelerated rate. We'd be keen to drive that rate even faster and get even more people connected. So if in five years time if most of the people in India can get online, that's a great outcome. It really changes the lifestyle of people with access to information today. One of the reasons why we think that this inflection is happening now. **d**



USB Superspeed+ rises

In the final deathmatch between USB Superspeed+ and Thunderbolt, who will win? <http://dgit.in/1ldJTP>



Your CDs are dying

Discs burnt in the '90s are dying. Don't worry, because they were always meant to die off by now. <http://dgit.in/TBJZ4R>

Industry Connect

In conversation with Nick D'Aloisio

The programming prodigy who is younger than Yahoo! Inc. but ended up getting USD 30 million from them for his news summary app, talks to us about the recently launched Yahoo News Digest. Excerpts follow:

Siddharth Parwatay

siddharth.parwatay@thinkdigit.com

d Tell us a bit about the story so far.

I joined Yahoo! about this time last year through an acquisition. My company was called Summly, and Summly took long form news articles and automatically, algorithmically summarised them into paragraphs. When I first came to Yahoo! we decided to integrate that technology within about two weeks into the Yahoo! News app in the US and ship that out. Once that integration was complete, I started focusing on what I wanted to do in the mid to long term at Yahoo! that's when we came up with the idea of Yahoo News Digest. The premise behind this new app was to twice a day – one in the morning and once in the evening – inform the user of all the most important stories that they need to know to kind of become intelligent citizens.

d Like the Canada one, are you planning a local edition for India eventually?

As a product we don't see the international digest as a finished version. In our mind it's a constantly updating and iterative process. Just as we have three country specific editions at the moment (and the generic international edition), we could see other markets in which we'll introduce country specific digest. That is not decided individually by myself but by Marissa. We really want to test this model and introduce it one step at a time.

d The app seems to lack customization options. Can I choose to customise the timing for my news update?



Nick D'Aloisio

That's a great point. By design one of the many characteristics that separate it from other news apps is the need to make it simple – function right out of the box. It doesn't require users to do setups because that can deter from the experience. In order for people to become aware of this new concept, we didn't want to allow them to customise too much of it, because they wouldn't be able to use it for its intended use. First off if you do look at news consumption data and app consumption behaviour around 8 AM and 6 PM do then to be kind of the peak areas. That's about the time wires have stopped and that's what we were told by journalists would be the ideal times. So yes this is not a permanent thing and over time we will allow customisation of the notification timings. But to begin with we really didn't want to give people too much leeway. Also it's quite hard technically to allow for that.

d Are the sources of news human curated or are those also algorithmically driven?

The sources themselves are algorithmically driven from the content pool that Yahoo! has available. The selection of which stories actually make the Digest – that is done editorially. The reason is, algorithms are very good at the synthesis of the content. They're good at taking a cluster of articles, producing a summary, producing the atoms (key quotes, images, videos, stock tickers etc), but the problem with algorithms is – and this is actually a general AI problem – that it's very difficult for them to decipher nuance. It can look at social signals but what happens if the story is just emerging but it deserves significant importance? The algorithm isn't intelligent to understand that. That's where the editors come in and the reason why we've taken this hybrid approach.

d How's your typical work day at Yahoo?

I'm the product manager of Yahoo! News Digest. That's what I spend the majority of my time at Yahoo! On the side, when I'm not in the office, here in California I'm studying for my final exams. It's been very hectic handling this dichotomy – one minute doing digest the other going back to class having to study and revise. However lot of the stuff is complementary.

d Is there a plan in place to monetize the app eventually?

It's all about getting to critical mass or scale where that would make sense. So we're actually doing a bit of testing of ads in some markets. For the moment our focus is very much on just creating a beautiful user experience. **d**

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worldview

OUR PICK OF THE BEST TECH ARTICLES FROM AROUND THE GLOBE

(MUST READS)



A BUFFET OF MONEY MATTERS

Warren Buffett is widely regarded as one of the most successful investors and businessmen in the world. The Oracle of Omaha shares some of his wisdom.

<http://dgit.in/vvBuffet>

AN ALTERNATIVE TO FOOD

We all like to call ourselves foodies, but we've all had instances where we wish we could skip a meal or two without the ensuing hunger. Soylent, a food-substitute might just be what you're looking for.

<http://dgit.in/vvSoylent>

GAME OF PATENTS

What happens when a company that fiercely protects its intellectual property meets one that doesn't respect it? The 'smart-phone wars' fought over billions of dollars in lawsuits, litigation expenses and lawyer fees by Apple and Samsung.

<http://dgit.in/vvPatentWars>

PAMPERED AT 10000 FEET

Flying business class isn't something most of us do often, so airlines have been working hard at creating an unforgettable experience. Seeing as you spend most of your time in the aircraft sitting (or reclining), here's how one airline is making a big difference in travel comfort.

<http://dgit.in/vvAirlines>

[Lifehacker Corner]

SECURING YOUR WIRELESS ROUTER



Most of us start using our routers after configuring the bare minimum of options – an SSID and a form of authentication. Modern routers, though, offer far more sophisticated forms of security, from hiding your SSID and allowing/blocking certain MAC addresses, to installing a completely different firmware for additional features. <http://dgit.in/vvRouter>



Buying used stuff

While most of us avoid it, buying used items can actually be a smart move for those looking for a good deal. The increased savings do come with an increased risk, though, and it's important to know how to protect yourself from buying counterfeits.

<http://dgit.in/vvUsed>



Lessons from comedy

Everyone loves a stand-up comic, and the best ones make their job look super-easy. It's an art, though, and the greatest stand-up comics exhibit strict discipline and a strong work ethic. The likes of George Carlin, Louis C.K. and Jerry Seinfeld have learned a thing or two about life. <http://dgit.in/vvComedy>



Finding the time

If you're the kind of person that likes to wait around for the 'right time' to do something, you're not in the minority. Lifehacker explores the ideal time of the day to schedule daily activities like sending emails, shopping for groceries or booking a doctor's appointment.

<http://dgit.in/vvTime>

THE YEAR OF FACEBOOK

Facebook has certainly come a long way from its modest beginnings in a Harvard dorm – and now that the company has grown public, it's performance has been under severe scrutiny. But it hasn't disappointed, oh no siree.

<http://dgit.in/vvFacebook>

INTERVIEWING GEORGE R. R. MARTIN

Game of Thrones, the hit TV show based on the epic fantasy series hardly needs an introduction. Rolling Stone magazine gets some of the most pressing questions answered with an interview with the man behind it all.

<http://dgit.in/vvGRRM>

CHAT WARS

It almost seems like an eternity ago – but there was a time when the likes of AIM, ICQ and Yahoo Messenger ruled the Instant Messaging world. MSN Messenger by Microsoft came late to the party and drove AOL mad. Soon, a legal battle ensued. What fun!

<http://dgit.in/vvChatWars>

HACKING YOUR LIFE

"Lifehacking" is a term that's relatively recent – and has come to denote any effort in increasing one's personal productivity. While we scramble for any productivity tip that promises to make us more efficient, the concept itself is very, old, going back to the industrial revolution.

<http://dgit.in/vvLifeHacking>

4G in India: Challenges and opportunities

While India gears up for the fourth generation of mobile telecommunications, we take a detailed look at the possible challenges and drivers.

– By Kul Bhushan

It has been almost two years since Bharti Airtel launched 4G services in India. Launch of the fourth-generation of mobile telecommunications had come at a time when 3G was still in its nascent stage. While 3G coverage has grown significantly, 4G seems far from becoming mainstream. Though Airtel has rolled out 4G in some more circles, other telecom operators such as Aircel, Videocon Telecom and Reliance Jio are likely to launch their 4G services around year-end or starting next year. Deployment of 4G network in India is certainly not going to be easy as the telecom operators face the challenge to launch a new network along with improving the existing 2G and 3G networks in the country.

Multiple frequencies

One of the major challenges is the usage of multiple frequencies for rolling out LTE. While co-existence of all radios/spectrum is always possible, it also means that the mobile phone makers need to add support for more radios, which may lead to more costs or complexities. A standard usage of 4G frequency will simplify things for the operators as well as the hardware manufacturers.

Airtel currently offers 4G for mobile on 2300 MHz LTE and it plans to roll out high-speed 4G networks in various circles using FD-LTE (frequency division LTE) technology in the 1,800 MHz band along with its existing TD-LTE (time division LTE) rollout in the 2,300 MHz band, giving it a pan-India 4G footprint.



Even as 2,300 MHz is gaining momentum, the 1800 MHz is considered to be a more "global" spectrum for 4G network. Currently, the 1,800-MHz spectrum is being used to offer only 2G voice services in India but with the government liberalizing spectrum, operators have the option to deploy 4G network on the 1,800 MHz band as well. Telecom operators, however, will need more spectrum from 1,800 MHz to provide smoother LTE service.

Around 108 operators have launched 4G services on 1800 MHz band in 58 nations. 4G on 1800 MHz covers 44 percent of total LTE networks globally. It requires 30 percent lesser towers than on 2,300 MHz.

Similarly, 700MHz and 850MHz bands are considered good for LTE deployment as they offer lower frequency and propagation losses are less. Unlike 1,800 MHz, these bands lack an eco-system and may require a few more years.

Price and Smartphones

One of the main reasons behind slower adoption of 3G was its steep pricing. 4G faces the same challenge. India is a price-sensitive market. Operators have been wooing customers with low-cost tariff plans for both data and voice. Brief price wars have helped increase 3G adoption in the country. For 4G,

operators will have to launch customized plans for Indian customers.

However, it is going to be really difficult for the telcos as they reel under pressure to maintain their margins as they pay spectrum costs.

"The challenge for telecom service provider in the coming years would be to provide one Rupee per Gigabit over 100 Mbps by 2020 to everyone", says Mr. Vipin Tyagi, Director & Member of Board, Centre for Development of Telematics (C-DOT) while addressing LTE India 2014 conference in Delhi. Users would expect digital action in real time in their daily work and play. Indigenously research development like GPON technology by C-DOT has reduced costs.

"LTE deployment is slowly picking up in the Indian market and we are now neck-to-neck with the global market. While India was almost 10 years late with 2G and almost Six (6) years late with 3G as compared to the

DESIGNING A DIVORCE

Gotham, the typeface is one that's beloved by the industry, second in popularity only to the overused Helvetica. The pair of designers behind the typeface were in high demand. Everything seemed great, until one designer sued the other – for \$20 million no less.

<http://dgit.in/wvFonts>

AMAZON = :-{ ?

Amazon is probably the world's most adored shopping sites. The insides of this great ship, however, tell a completely different story – one of discontent, unhappiness among its employees and a very poor work-life balance. A tell-all.

<http://dgit.in/wvAmazon>

MAKING GUNS COOL

Kids these days aren't really playing with toys; preferring their entertainment through mobile apps instead. Mattel, three years ago, embarked on a quest to build toy gun that kids would love to use. The story of the hurdles it faced is a thrilling read.

<http://dgit.in/wvToys>

THE MONA LISA IS BEAUTIFUL... RIGHT?

When a work of art is deemed 'beautiful' by a team of experts, people take their word for the truth and stop thinking about it for themselves. Take the Mona Lisa, for instance. Ian Leslie examines this psychological phenomena of art appreciation.

<http://dgit.in/wvMonaLisa>

global market,” adds Mr. Ranjan Sharma, Director Technical & Commercial, ZTE Telecom India.

Speaking of smartphones, right now there are very few smartphones that support LTE. 4G adoption is likely to get another boost from the low-cost/budget smartphones supporting the network. Smartphones bundled with data plans can also help drive LTE adoption.

Quality of service

The Indian telecom operators have always struggled to deliver quality. Not that they aren't making efforts, but catering to such a huge customer-base hasn't been easy. Data coverage has a lot of (arguably) discrepancy across the country. There have been some improvements over the years, though operators need to improve the existing 2G and 3G coverage and services along with the deployment of the new 4G network.

Moreover, LTE is set to create “data avalanche” as customers are expected to consume heavy data content such as videos, games and stream content. Operators need to brace up to deliver hassle-free services to customers.

Applications / Content

As in the case with 3G, customers tend to consume more content online if given faster and smoother data network. There's been a significant growth in consumption of videos, especially on the mobile platform.

According to a recent survey conducted by Vuclip, about 62% of Indian respondents prefer to view movies or TV serials instead of short movie clips on their phones. At 79%, this preference for long form content is extremely high among the age group of 18 years and under. Additionally, 89% of all respondents say they would watch their favorite movie on their

mobile phones if it was made available. If divided further by gender, 90% of male respondents and 84% of female respondents from India say that they would view their favorite film via mobile.

With 4G, consumption of online videos is likely to grow. Moreover, streaming of HD videos (and perhaps 4K content as well) is going to put a huge stress on the LTE network – for which telcos need to be prepared.

Ericsson India in its outlook for India's broadband segment points out that every app has its own requirements depending on the network performance. Operators can customize or prioritize the consumer's experience for certain apps.



Through techniques such as deep packet inspection and policy control, the network is able to identify which app is demanding more data throughput. Coupled with data plans that are ideal for certain apps – say for instance you care more about video streaming than IM apps – the network could in theory, customize the experience

for you. In other words “App Coverage” aims at delivering sufficient performance to run an application at acceptable quality.


Enterprise adoption

In addition to general usage, LTE adoption heavily banks on adoption by the enterprise market. With offices and businesses, especially the SMBs, embracing the newer and faster network, LTE will see a larger mass adoption.

Moreover, more and more organisations allowing remote working through BYOD, employees are increasingly dependent on their smartphone Internet connection to work while out of the office. The better speed of 4G can help them do more and faster.

LTE to go rural

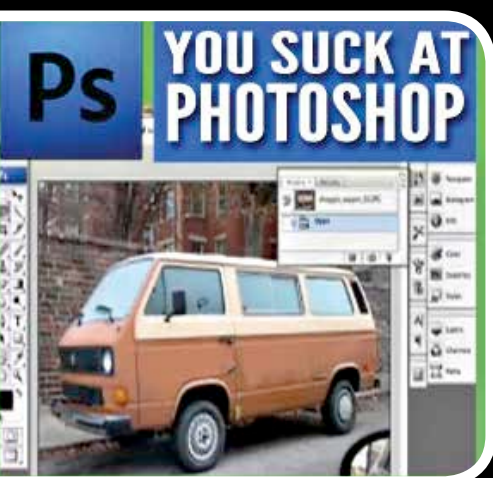
LTE cannot remain niche for too long. It has to be accessible by all. We expect telcos to initially focus on the metro and urban cities, but sooner or later it has to reach the rural consumers, considering growing data consumption in tier 2 and tier 3 cities. However, telcos are still in the middle of making efforts to make 3G available to the masses. It will be interesting to see how telcos make that quick jump from 2G to 4G in the rural segment.

That said, the telecom industry seems very optimistic about the deployment of 4G in India. However, the major part of a successful adoption will depend on right strategy and implementation. Undoubtedly, 4G has massive potential and could be a key driver to India's growth in the IT and telecommunications sectors. 

What do you think about 4G? Do you think it's high time telcos should make 4G available across the country? Let us know your views by writing to editor@thinkdigit.com

YOU SUCK AT PHOTOSHOP

Everyone seems to want to learn Photoshop - and the overflowing list of guides and tutorials on the web is testimony to that. But for



those who don't have the patience to sit through a book or a lengthy guide, the Comedy Network has a bunch of hilarious videos that teach you the basics of Photoshop without you even realizing it!

<http://dgit.in/vvPhotoshop>

(QR Code)



For a list of all the links from this section, head over to <http://dgit.in/vvJune2014> Or point your phone to the QR code above

(PRODUCT LAUNCHES)

ONEPLUS ONE



Chinese company OnePlus has come out with a beast of a smartphone, at an unbelievable price. Christened the 'One', it has a powerful Snapdragon 801 processor, 3GB of RAM, a 5.5-inch 1080p display and a 3100mAh battery – priced at \$299.

Price: ₹18000 (approx)

SONY XPERIA Z2 TABLET



Alongside the flagship Sony Xperia Z2 smartphone, Sony also launched a tablet version of its waterproof device. Coming in at 10.1-inch, the tablet has a vibrant 1920x1200 display, 3GB of RAM, a quad-core processor and an 8.1MP camera. It's also waterproof.

Price: ₹30,000 (approx)

LENOVO IDEAPAD FLEX 10



Lenovo's laptop-tablet hybrid aimed at the lower-end of the market, features a rather disappointing list of specs – a lowly Intel Celeron processor, 2GB of RAM and a 500GB mechanical hard drive. But it has a cool rotating screen, morphing into a tablet.

Price: ₹26,000

WORD JUMBLE

H	V	P	U	C	X	H	P	E	C	F	W	V	J	P	T	B	N	O	M
A	L	O	P	U	R	T	L	P	I	R	A	C	Y	W	I	C	A	I	V
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Z	T	E	L	Z	T	C	Y	U	Q	N	X	N	D	J	L	H	C	K	E
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V	I	N	A	P	I	F	I	Z	W	A	R	P	U	S	C	D	L	M	Q
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ABSOLUTE
TIMEPASS

There are 15 tech terms starting from P in the puzzle alongside. Find them all [Hint: use the Encyclopedia Technica Vol IV for help]

Top 3 YouTube Picks

Make sure your boss doesn't catch you goofing off with one of these videos playing on your screen



The modular smartphone

Project Ara – the famed modular smartphone being developed by Google is almost a dream come true for tech-nophiles. Behold history! <http://dgit.in/vvAra>



Superfast charging

Everyone knows the weakest link in a smartphone is its battery. Newer batteries made using Graphene promise to change that. <http://dgit.in/vvCharge>



Drawing human faces

Remember in school, when you were asked to draw humans, how you'd always dread drawing the face? It's not just you! <http://dgit.in/vvFaces>



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Club members need to submit at least one article a month to keep their membership alive. You even get to choose your own topic– the only constraint is it should be technology related (obviously!).

Interested? Visit digit.in/writers_club to register



INTEL® INDE A NATIVE CROSS-PLATFORM DEVELOPMENT SUITE

The need of the hour, in this competing era of professional mobile application development, is a native cross-platform development suite, and Intel® has brought just that to the table! The need for native development is attributed to hardware specific optimisations and cross-platform development has become essential today for faster deployment in competing markets. With the beta release of Intel® Integrated Native Developer Experience (hereafter referred to as Intel® INDE), we can now expect more from our applications and from other applications (designed for different architectures) as well – in terms of fluidity and thereby better user experience. This has been made possible by the various compiler optimisations offered by the native tools in the suite, which

- **EASY TO USE: C++/ JAVA* NATIVE TOOLS & SAMPLES FOR ANDROID* AND MICROSOFT WINDOWS***
- **DEVELOPMENT FRIENDLY: INTEGRATION OF TOOLS INTO POPULAR IDES SUCH AS ECLIPSE**
- **FUTURE PROOF: AUTOMATIC UPDATES TO THE LATEST TOOLS & TECHNOLOGY**

help in making applications native to the 64-bit architecture of the processors for useful hardware optimisations.

Android application developers can incorporate native code using the Native Development Kit (NDK) toolset. The NDK allows developers to reuse legacy code, code to low-level hardware, or differentiate their apps by taking advantage of features otherwise not optimal or possible such as the recent addition in hardware for heartbeat, pulse and calorie sensors in Samsung Galaxy S5. Applications are now being made that employ these added hardware features. They have to resort to legacy code for the analog signals, as you can imagine, similar software has been made only for devices with completely different architectures. Similarly, now with the help of native coding, other hard-

ware components such as the camera, gyro and proximity sensor can be played around with and optimised, in theory.

Easy-to-use native tools for reusing code in C++ and Java across operating systems and platforms, which seamlessly integrate with popular Integrated Development Environments (IDEs) such as Eclipse, make development quicker and enable the delivery of higher performance – and thus, more responsive – apps. All the popular tools and technology provided in the suite are completely future-proof to any updates. The Intel® INDE tool provides useful documentation and support with in-hub alerts for new tools as well. This development suite has tools like Intel® XDK and Intel® HAXM, which can be used to compile code and port applications to Java-based Android as well as Microsoft Windows targets. However, the optimisations provided are specific to mobiles powered by ARM architecture and best for Intel® architecture-based devices running Android 4.3 and above, and Microsoft Windows 7/8.1. Additional tools for host and target support have been announced to be launched this year.

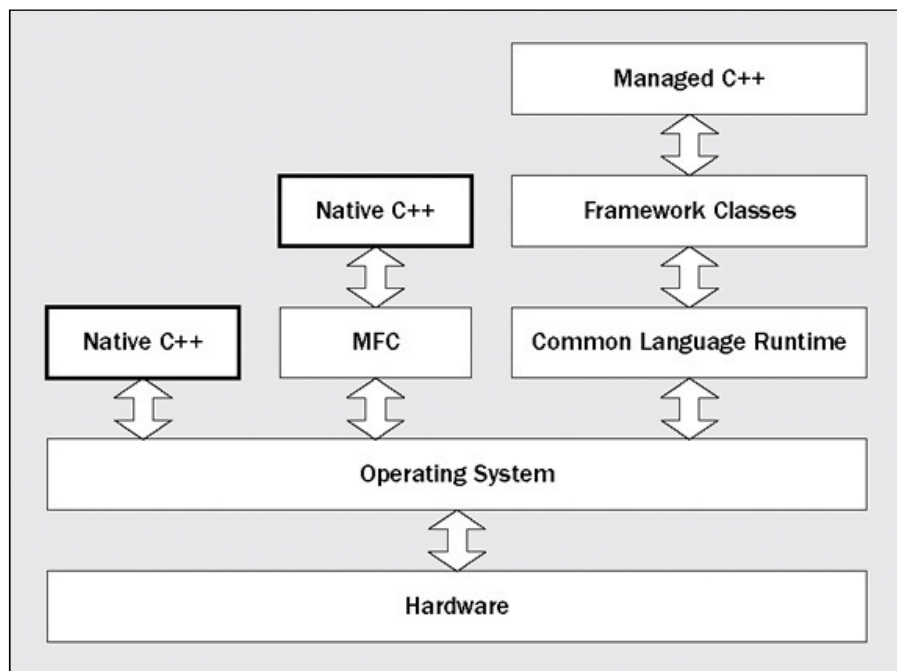
Intel® INDE offers easy-to-use solutions to speed up development for existing and new-to-Android developers using C++ or Java. From quick, professional-grade implementations of media video conferencing, to real-time analysis and debugging of graphics, Intel® INDE offers performance-oriented solutions. This facet of Intel® INDE has been emphasised by its additional ability to compile legacy/native code compared to other IDEs for Android target development. This is essential to perform hardware-specific optimisations with your software. Applications that were made for different architectures (https://en.wikipedia.org/wiki/Addressing_mode) can now be ported to Intel® Atom-based processor devices. For example, if specific hardware architecture is being targeted, it becomes easier for the software developer to code in optimisations, as s/he knows how and where to address the variables without the need for any translations or buffers, thereby easing the load on the hardware.

Intel® INDE runs on 64-bit Microsoft Windows 7/8.1 host systems with a minimum of 4GB RAM and 6GB worth of free space. However, to be able to use Intel® HAXM (Hardware Accelerated Execution Manager), the system must have Intel® Virtualization Technology enabled in BIOS.

Intel® INDE provides access to the following:

- Intel® Tools:
- Intel® INDE Media Pack for Android*
- Intel® Threading Building Blocks
- Compute Code Builder beta
- Intel® C++ Compiler for Android*
- System Analyzer: Part of Intel® Graphics Performance Analyzers (Intel® GPA)
- Platform Analyzer: Part of Intel® GPA
- Frame Analyzer: Part of Intel® GPA

installing only those tools that are required, making the environment highly customisable. There is Eclipse (through the Android SDK for Java development), vs-android plug-in for Microsoft Visual Studio IDE support and Apache Ant for command line development. Other tools include Android NDK for C++ development, Android Design for style library integration and Intel® Hardware Accelerated Execution Manager



Native C++ is used to code the binaries and tools provided by Intel INDE. Optimizations become more efficient as the language gets closer to the hardware.

- Intel® Frame Debugger beta
- Environment Setup: Includes an optional installation of Intel® HAXM

Third-party Tools (Optional components/installations that are part of Environment Setup):

- Google Android* SDK
- Android* NDK
- Android* Design
- Apache Ant*
- vs-android plug-in for Microsoft* Visual Studio*

OVERVIEW OF INTEL® INDE

- **Environment Setup:** Formerly made popular under the codename 'Beacon Mountain', the Environment Setup tool in Intel® INDE quickstarts development by installing an IDE and integrating popular tools. The interface provides the option of

(HAXM) for Android (among others) app emulation in a host environment.

- **Media Pack for Android:** Developers can create and add visually compelling video and audio extensions that are native to the hardware of the mobile. Applications can be developed with ease by using the media component, available through Intel® INDE. The Media Pack for Android* enables visually powerful and easily integrated top video and audio use cases (which determine the preferred bitrates for both), delivering professional quality solutions for camera, screen capturing, video editing, video streaming and audio fingerprinting. Source code and examples are given to help advanced programmers further customise their video transcode pipeline. All libraries are optimised for x86 and ARM* based Android* devices running Jelly Bean 4.3 & above.

- **Threading:** Intel® Threading Building Blocks (TBB) is another rich set of components that is meant for the efficient implementation of higher-level, task-based parallelism. Intel® TBB provides a widely used, award-winning C and C++ library for the development of higher performance and scalable applications. The threading capability supports development of apps for both, Android and Microsoft Windows targets. The addition of threading optimisations has made games and other video/animation-related applications better in performance.
- **Compute Code Builder:** For development of code that executes on computing devices beyond the CPU and for performance maximisation with programmable graphics, the Compute Code Builder has been added to the suite. This tool assists with creating, compiling, debugging and analysing compute APIs such as Renderscript* and OpenCL™. The Compute Code Builder, which integrates with both, Microsoft Visual Studio and Eclipse, supports development of apps for Android and Microsoft Windows targets.
- **Compiling:** Intel® C++ Compiler provides time-saving compiling support on C++ code for Android*. Developers benefit from years of Intel® experience in delivering performance-oriented compilers for Intel® architecture. The Intel® C++ Compiler is compatible with Android tools, including

Eclipse and source code compatible with GCC (GNU Compiler), which essentially means that it supports the way developers already work by accommodating familiar IDEs. The GNU C++ Compiler is also provided through the Android NDK, which is a customisation option in the Environment Setup component of Intel® INDE. The compilers support development of applications for only Android targets as of now.

- **Analysis & Debugging:** The Platform Analyzer is a powerful component enabling trace analysis of CPU/GPU performance metrics, API call tracing, code execution, CPU/GPU usage, and task data. The System Analyzer allows for platform and application-specific GPU* analysis & performance overrides for OpenGL and DirectX*. Frame Analyzer can be used to perform deep-dive frame capture analysis of workloads, asset exploration, live state, uniform & shader editing, override performance experiments and more. Real-time, in-depth exploration of OpenGL-ES 1.1/2.0 workloads is made easy with the Intel® Frame Debugger, available through Intel® INDE. This component allows for the debugging of OpenGL-ES API errors, exploration of textures, shaders, vertex layouts and related shader objects. Analysis and debugging tools support development of apps for Android and Microsoft Windows devices running on Intel® architecture.

HOW TO GET STARTED

1. Download Intel® INDE tool, along with Intel® HAXM for hardware optimisations and Intel® XDK for cross-platform development.
2. Your first app can be made using only Intel® XDK. Download it from <http://xdk-software.intel.com/>
3. Install Intel® XDK. It is a standard installation.
4. Open Intel® XDK. Note: It won't open automatically after installation.
5. After the sign-up window appears, click on the option 'Need to sign up for new account?'
6. Fill in your credentials and click on 'Confirm'.
7. Next, log in with your new user ID and password.
8. Now follow the Do-It-Yourself (DIY) instructions to install Android SDK and set up the development environment for Intel® Atom-based architecture devices.

INSTALLING ANDROID SDK FOR INTEL® ATOM – DIY ANDROID* SDK

The SDK includes tools and platform components for developers to build, test, and debug their Android* applications and manage the Android* platform component installation. The SDK also provides easy ways to integrate with the build and development environments; for example, with Eclipse* or Apache Ant*.

SYSTEM REQUIREMENTS

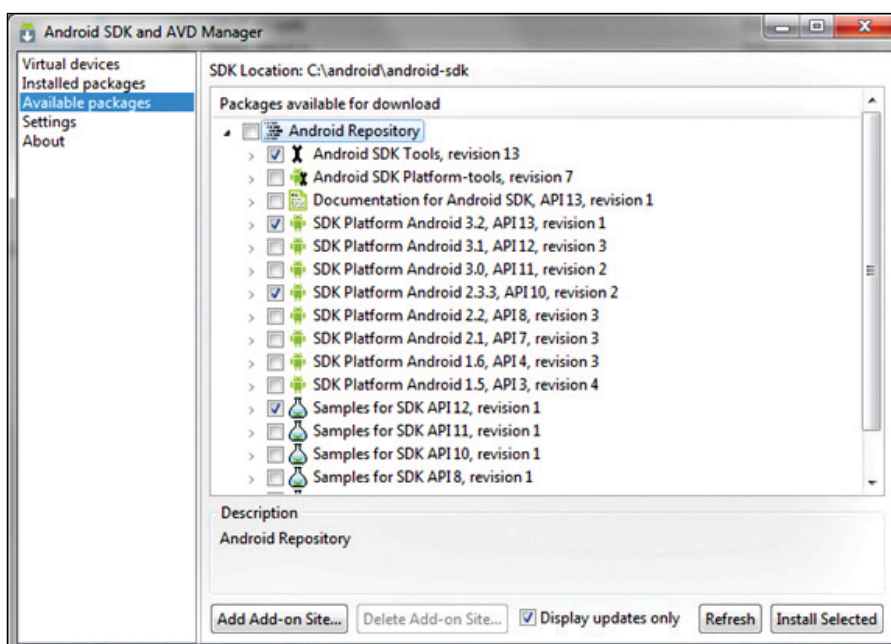
This section describes the hardware and software environments required by the Android* SDK.

SUPPORTED OPERATING SYSTEMS

- Windows XP* (32-bit), Vista* (32- or 64-bit), or Windows 7* (32- or 64-bit)
- Linux* (Ubuntu, Fedora)
 - GNU C Library (glibc) 2.7 or later is required.
 - On Ubuntu Linux, version 8.04 or later is required.
 - On Fedora, target versions are F-12 and higher.
 - 64-bit distributions must be capable of running 32-bit applications.

HARDWARE REQUIREMENTS

The Android* SDK requires disk storage for all of the components that you choose to install. Additional disk space is required to run the



Android Software Development Kit(SDK) and Android Virtual Device(AVD) Manager - Available Packages Dialogue Box.

emulator, for example, to create SD cards for the Android* Virtual Devices (AVDs).

INSTALLING THE JDK

Java* JDK 5 or JDK 6 is required by the SDK. JRE (Java* Runtime Environment) alone is not sufficient. If your system doesn't have either, you can download JDK SE 6 from <http://www.oracle.com/technetwork/java/javase/downloads/index.html> and install it on your system.

INSTALLING ECLIPSE*

To develop Android* applications, using the SDK with Eclipse* is highly recommended. You can go to <http://www.eclipse.org/downloads/> to download or update Eclipse*. We suggest using the following Eclipse* setups to develop Android* Applications for Intel® architecture:

- Eclipse* 3.5 (Galileo) or greater
- Eclipse* Classic (versions 3.5.1 and higher)
- Android* Development Tools Plugin (recommended)

INSTALLING APACHE ANT (OPTIONAL)

Developing Android* applications using an integrated development environment such as Eclipse* is highly recommended. But as an alternative, Apache Ant* can be used in conjunction with the SDK to build Android* applications. You can visit <http://ant.apache.org/> to download the binary distributions and install Ant. To work with the SDK, Ant 1.8 or later is required.

DOWNLOADING THE SDK STARTER PACKAGE AND ADDING THE SDK COMPONENTS

You can download the SDK Starter Package at <http://developer.android.com/sdk/index.html>. The SDK Starter Package does not include the platform specific components you need to develop Android* applications. It only provides the core SDK tools for you to be able to download the rest of the platform components.

After installing the SDK Starter Package, run Android* SDK and AVD Manager.

- On Windows*, go to Start > All Programs > Android* SDK Tools > SDK Manager
- On Linux*, run `your-android-sdk-directory/tools/android`

On the Android* SDK and AVD Manager dialog, on the left panel, select 'Available packages'. On the right panel, click and expand the 'Android Repository' node and select the packages to install.

SETTING UP ECLIPSE* TO WORK WITH THE SDK

If you use the Eclipse* IDE to develop software, we highly recommend installing and setting up the Android* Development Tool (ADT) plug-in.

INSTALLING THE ADT PLUG-IN FOR ECLIPSE*

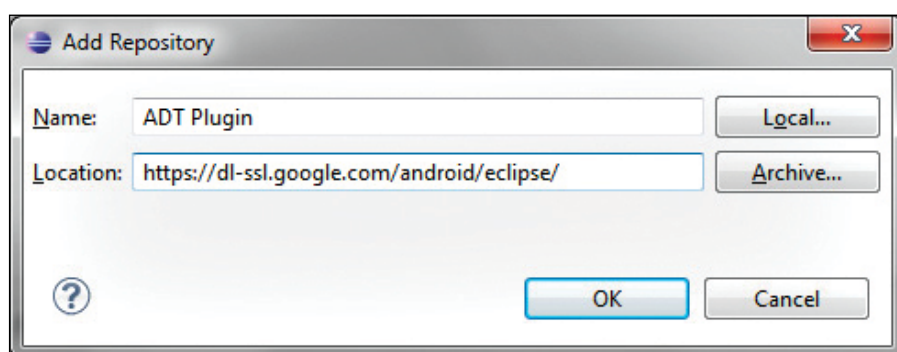
1. Start Eclipse*. Select Help > Click 'Install New Software...' on the Install dialog > Click the Add button.
2. On the Add Repository dialog, enter 'ADT Plugin' in the Name field and 'https://dl-ssl.google.com/android/eclipse/'

[google.com/android/eclipse/](https://dl-ssl.google.com/android/eclipse/) in the Location field > Click 'OK'.

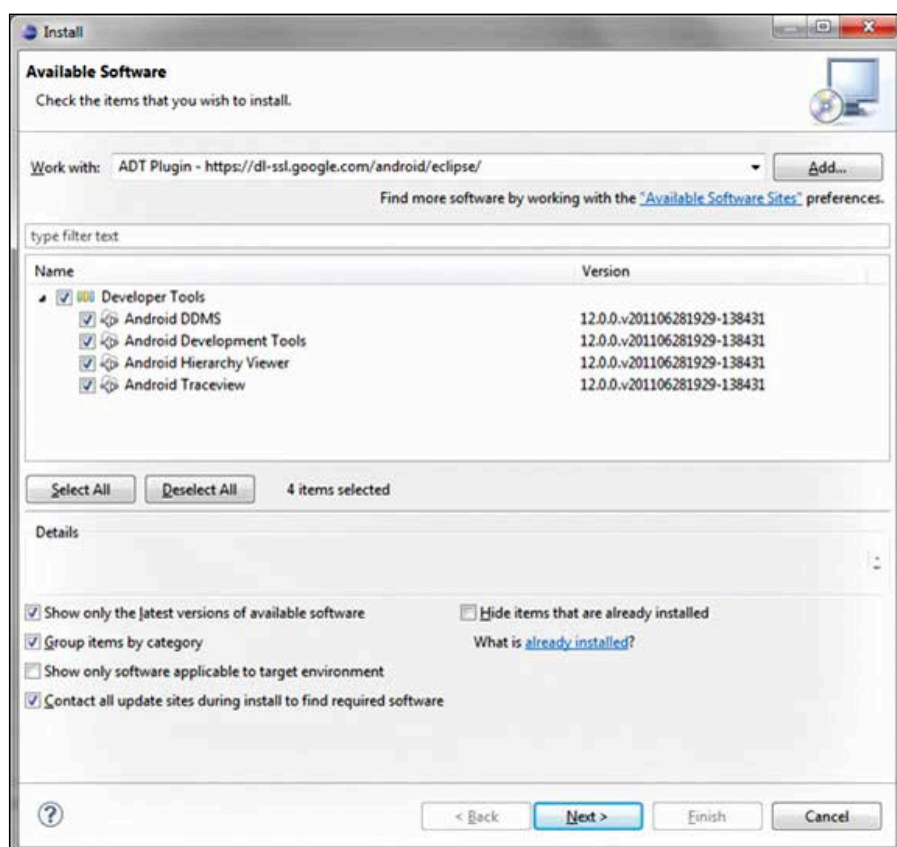
3. It will take you back to the Install dialog, connect to the Google repository server and display the available ADT packages.
4. Select 'Next' > Accept the license agreement > Select 'Finish'.
5. Restart Eclipse* at this point.

CONFIGURING THE ADT PLUG-IN

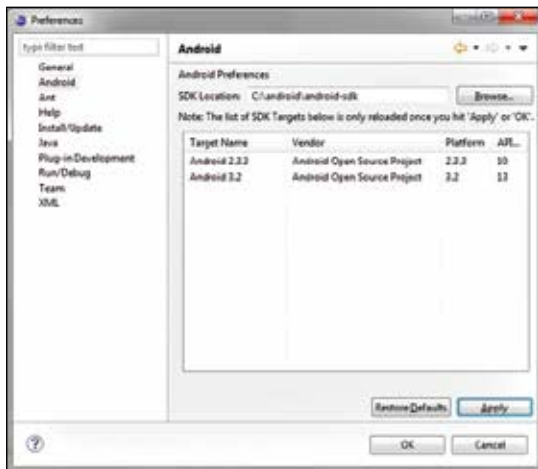
1. Start Eclipse*, select Windows > Preferences
2. On the Preference dialog, select Android* from the left panel. On the right panel,



Adding the repository for Android Development Tools (ADT).



Installing ADT plug-in for eclipse.



Preferences Dialogue Box in Eclipse. Android menu selected.

use the Browse button to navigate to your Android* SDK installation directory. Click 'Apply'. A list of SDK targets you have installed will show up. At this point, click 'OK'. Once you have gone through the aforementioned steps, you will have the necessary tools available to start Android* for Intel® architecture (IA) development. If you are new to Android*, now is a good time to go ahead and write your first Android* app and test it on an IA-based device!

- Now let us begin with your first Android app. Later we will test it on an IA-based device.
- Click on 'Start with a Blank Project'. Fill the 'Name your project' field with 'digit-test', browse to your desired location for the project and click 'Create'.
- Take the tour of the Intel® XDK interface to understand it.
- Once the tour is complete, a bunch of code will be generated for you. To learn more about the interface of Intel® XDK, visit <https://software.intel.com/en-us/html5/articles/using-the-editor-in-the-develop-tab>.
- At line 23, you will be able to find 'content goes here' commented out.
- Add the line `<h2>Hello, Digit!</h2>` at line 24, between the `<body>` tags.
- File > Save
- Move from Develop tab to Emulate tab to see a preview in a wide list of devices running Intel® architecture.
- Go to the Start New App window by clicking on the project name (top-left) and finding the option of '+New Project' under it.
- Give the project a unique name and

click 'Create' with 'Start with App Designer' option.

13. You will be able to drag-and-drop UI elements, change their names, labels and placeholders. You can even code in functionality to trigger actions in JavaScript by using the 'Edit Script' option.

14. This is how most HTML5 apps are made – with an app designer and JavaScript code for functionality.

15. Play around with the 'Work with a Demo' option for sample codes.

16. Preview your application in various resolutions and devices.

If you're wondering why Intel® decided to use HTML5, watch 'Why Intel® Loves HTML5' at <https://software.intel.com/en-us/videos/why-intel-loves-html5>.

Also be sure to check out the following tutorials:

'Building an HTML5 App for Google Play' – <https://software.intel.com/en-us/html5/videos/building-an-html5-app-for-google-play>

'Creating and Porting NDK-based Android Apps for Intel® Atom Processors' – <https://software.intel.com/en-us/android/articles/creating-and-porting-ndk-based-android-apps-for-ia>

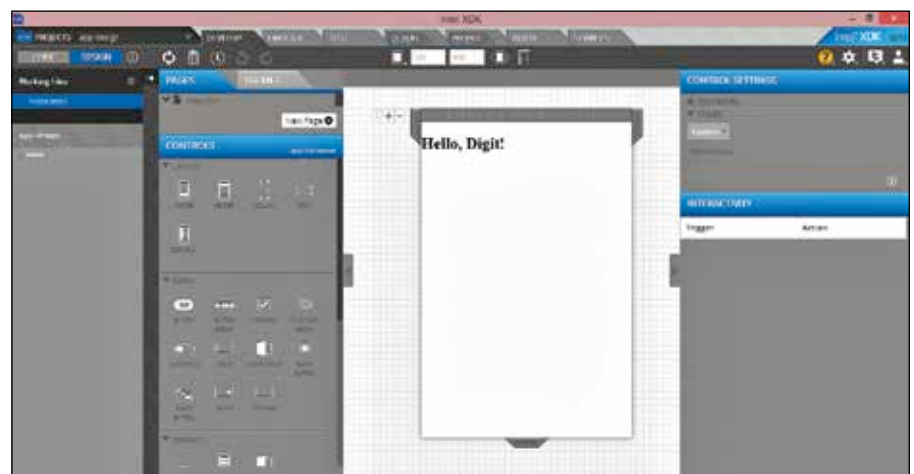
'Speeding up the Android* Emulator on Intel® Architecture' – <https://software.intel.com/en-us/android/articles/speeding-up-the-android-emulator-on-intel-architecture> (for learning command-line coding and speeding up emulation using Intel® HAXM.)

TESTING

A comprehensive list of devices running Intel®-based architecture can be found at <https://software.intel.com/en-us/android/get-device-for-live-testing-purposes>. Increasingly more Android devices have Intel® processors inside. If you don't wish to spend money on a new phone just yet, you could make use of 'AppThwack', a free cloud-based testing platform that emulates Intel® devices. You can access Intel®-based Android devices to test your apps because of the recent association of Intel® with AppThwack. In addition,



Intel XDK - Code preview

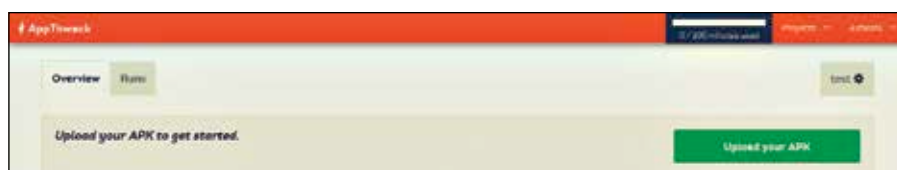


Intel XDK - Design preview

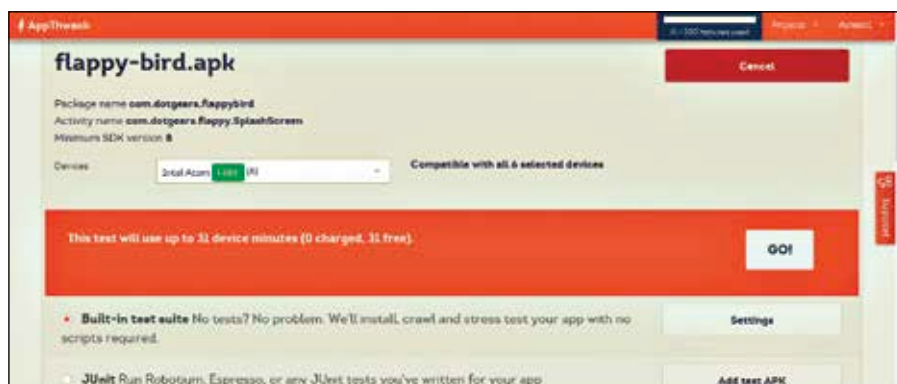
tion, you can find great tools, documentation and support to write, port or optimise your Android apps at the Intel® Developer Zone. Currently, the following devices are supported and offered as free minutes: Asus MeMO Pad FHD 10, Dell Venue 7, Dell Venue 8, Lenovo IdeaPhone K900, Motorola Droid RAZR I and Samsung Galaxy Tab 3 10 – some of the best Intel® Atom devices in the market right now. At AppThwack, you can test your code with its automated tests or take full control with any of the automation frameworks it supports, such as Robotium, Calabash or the new Espresso.

ONLINE TESTING OF APPLICATIONS WITH APPTHWACK

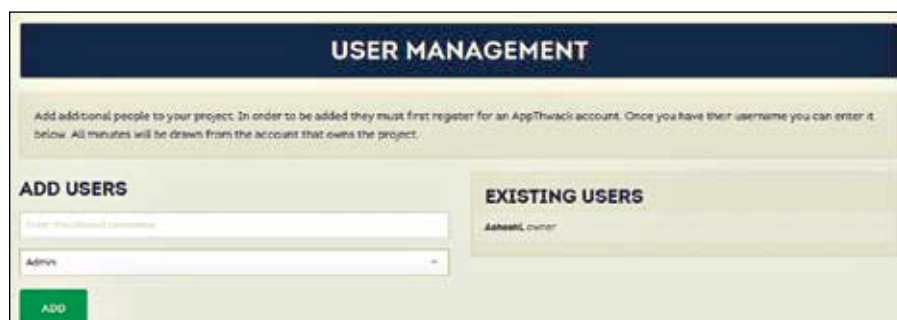
1. Sign up at AppThwack by visiting <https://appthwack.com/user/profile> to avail 100 minutes of free testing.
2. Once, the email verification is done, log in by filling in your login details at <https://appthwack.com/user/login> and thereafter clicking on 'LET'S GO'.
3. You will be directed to <https://appthwack.com/project>
4. Enter a project name and let the option remain as 'Android App' or read the instructions given and select from Android, iOS and mobile web as per your requirement.
5. Click on 'CREATE PROJECT'
6. Check the dashboard for your 100 free minutes.
7. Upload your APK by clicking on the button provided.
8. After uploading, run the test and select 'Intel® Atom' from the list of device options.
9. Once you double-click on the 'Scheduled Test', the result will appear similar to the image shown here.
10. You can also check between the various



AppThwack Dashboard.



Testing Flappy Bird.apk using AppThwack



Additional settings provided for Adding New Users in different profiles within the same project.

test runs of your application by clicking on the 'Runs' option, which is adjacent to the default 'Overview' option.

11. If you click on the project name (top-right), you will get additional options of changing owner, adding users to the project and deleting the project.

Avail your limited time 12-month license

now at <https://software.Intel.com/en-us/articles/Intel-inde-free-program> and share your apps at the Intel® Developer Zone at <https://software.Intel.com/en-us/share-your-android-app-projects> or check out projects at <https://software.Intel.com/en-us/share-your-android-app-projects>. Documentation and a support forum are available to help quick-start development at www.Intel.com/software/INDE and queries and feedback facility is available at <https://software.Intel.com/en-us/forums/Intel-integrated-native-developer-experience-Intel-inde>. To catch the latest news on meet-ups and competitions, visit <https://software.Intel.com/en-us/android/whats-new>. Intel® Android-development tools like Intel® XDK and Intel® HAXM can be found at <https://software.Intel.com/en-us/android/tools> for download.

Welcome to the new era of mobile application development with Intel® INDE! ■



Intel XDK - 'Create New Project' Dialogue Box.



We've turned 13, and it's been a lucky 13 years so far. In order to celebrate we've brought together some of the coolest articles we've ever had in an Anniversary Issue. Starting off, as PC lovers who refuse to believe the PC will die, we just built India's fastest PC (perhaps the world's fastest?). Apart from this, we're also covering almost every aspect of tech-

nology – gadgets to buy, apps to install, technologies that will make a huge difference going forwards, essential entertainment for geeks, suggestions to make you rich, important people who made a difference, and even inviting you to showcase yourself. It's a jam packed anniversary celebration and we hope you like what we've put together for you. As always, remember to drop us a line at editor@thinkdigit.com with feedback!



PHONE APPS

Even more 13 madness with 169 Apps/Games you can't live without

Here's a list of some of the most amazing apps under the sun regardless of platforms. Take a gander at it and have your pick. There's something for everyone.

Digit Team

1 FTL

Command a spaceship on an epic journey to deliver a message of great significance to the galactic command HQ. An epic turn-based space-game this.

2 Flipboard

If you like news and magazines, why not use Flipboard to combine them into one?

3 Bridge Constructor

Put your engineering skills to use with this amazing game. Build bridges with the limited resources available and hope they can stand the test of time.



4 Digit App

Someone make it this for us please.

5 Flappy Bird

Controversy aside, this is by far the simplest, most addictive game to come out in a long time.

6 Earn To Die

Drive your way through a zombie apocalypse. And why not? It'll be so much fun. Upgrade your car with weapons, booster packs and other upgrades to create the ultimate killing machine on four wheels.

7 Dropbox

File synchronisation, data backup and sharing simplified.



8 Documents 5

Designed for the iPad, this is an excellent app for managing documents. It's also particularly good at opening PDFs and zips.

9 Collision Effect

Match moving orbs with each other in this sparkly and colourful, but tremendously challenging game.

10 PewPew

PewPew is visually similar to Atari's Asteroid, but with colour. The game is simple and a lot of fun. Exclusive to BB10 though.

11 Contacts+

If the Android contact manager and dialer are driving you up the wall, Contacts+ will save you. It integrates all your contact needs into one, all-encompassing app. Really useful.

12 StumbleUpon

Browsing the Internet is fun, but stumbling onto something new is even more fun. That's where StumbleUpon comes in. Keep stumbling people.

13 Feedly

We're all news junkies and we all want our dose of news on time. Feedly incorporates all your RSS feeds into one, easy to read list. Get reading.



14 500px

500px is a community that helps photographers share, discover, buy and sell photographs. You can create portfolios, collections and more as well as choose how to display your pics.

15 Badland

Badland is one of the most atmospheric and interesting side-scroller to pass through our filters in a long time.

16 iFixit: Repair Manual

This one's for all you DIY guys out there. Think of iFixit as the Wikipedia of repair manuals, allowing you and anyone else to create and edit a repair manual for anything under the sun.

17 Bright Camera

Rarely do we come across an app that is so grounded in a singular objective – to make selfies awesome. We don't really condone this trend, but, well, to each his (or her) own.

18 Infinity Blade series

If ever anyone claims that mobile devices are not a platform for serious gaming, show them Infinity Blade and they'll shut their trap.

19 Bit.Trip Beat

A musical and trippy take on the classic Pong game of yore, Bit.Trip Beat is definitely a must play. The song is tied to the beat and the better you play, the better the beat.

20 ComicFlow

It's hard to find a capable comic book reader on any platform, but ComicFlow for the iPad might just be the answer.



21 Color Sheep

A sheep that vomits colours, decided by your meagre colour creation skills, onto similarly coloured wolves might not sound like an appetising concept, but it is!

22 Amazon store

Amazon's entire store. On your phone. Need any more reasons to just sit and shop on your phone all day?

23 Hearthstone

The joys of Diablo and Warcraft are yet to be had on a tablet or phone, but at least you can enjoy playing your heroes as cards in this interesting card game.

24 Dead on Arrival

An isometric 3D shooter that involves over-powered weapons, zombies and piles of gibs sounds like a perfectly decent shooter to us. What do you think?

25 Ski Safari

Animals, an avalanche and a catchy sound-track come together to create an excellent endless-runner of the type that will keep you hooked for hours.



26 Hello

If Hangouts or your default messaging app doesn't float your boat, Hello might oblige. It provides you with a fresh and unique interface to message with.

27 Instagram

The app that transformed smartphone photographers into "hardcore" photographers (notice the dripping sarcasm?) deserves special mention. Still a good social platform though.

28 Fruit Ninja

Hack and slash your way through wave after wave of fruit as you hone your swiping skills till you go from mere pupil to a masterful assassin of fruits.

29 eBay

If you love eBay and do a lot of shopping there, this is the one app you can't live without.

30 Hundreds

Tap and hold grey circles to increase their size and thus, the value they enclose. Trust us, this is much harder than it sounds. A very addictive game indeed.

31 Google Drive

If you still aren't living in the cloud, this is the best place to start. Google Drive is more than the productivity suite, and is more like a repository of all your data.

32 Freecharge

Recharging your mobile phone is a routine task that most of us have to perform every month. But what if you could be rewarded for that task?

33 Foursquare

A sort of social network for places, foursquare lets you "check-in" to places that you visit and also leave comments, suggestions and more. It's also a great place to discover new places.

34 Dashclock

Android is known for its customisability and DashClock is the first app that will hit that point home. It's an amazing little widget that will completely transform your lock-screen.

35 Cheezia

Fast paws and quick reflexes will make you a cheese swiping ninja with the reflexes to put Ken Block to shame.

36 Asphalt 8: Airborne

An amazing arcade racing game that has a heritage dating back 10 years, and it's free, and it's available for Android and iOS. Why aren't you already playing this?

37 Adobe PDF

The ability to read PDFs is almost a basic right now. The best app for reading said PDFs is this one that's made by the creators of the PDF format themselves.



38 Flickr

From professionals to amateurs to your elderly grandma, Flickr is a fun and beautiful photo-sharing platform for people from all walks of life. The 1TB of cloud storage doesn't hurt either.

39 Google Currents

Unlike Flipboard, Google Currents allows you to access a multitude of sources, including Indian Publications and presents the information in cards. Useful nonetheless.

40 Gmail

Google showed us the true power of e-mail when they launched way back in 2004. The Gmail app is what brings all that goodness and power to your phone.

41 Google Maps

A guarantee of easy navigation anywhere on this Earth is peace of mind of the type our ancestors could only dream of, and that's what Google maps provides.

42 Flipkart

An online store that's giving Amazon a run for its money now has an app that's giving the Amazon app a run for its money. As a bonus, the app can also dish out discounts to you.

43 Bookviser

Poor Windows Phone users are still hard-pressed to find good apps for their platform, but this one at least serves as an excellent alternative book reader to the Kindle.

44 Avocado

An app that creates a personal channel between you and one other person is what this is. You can share everything from calendars and lists to hugs and kisses with that one person. Not for the lonely.

45 Gifboom

Everyone likes pics and almost everyone loves Instagram. Everyone also loves GIFs and if almost everyone wanted an Instagram for GIFs, this is it.

46 Hangouts

Google wants this to be your exclusive app for all your communication needs. While that is a lofty goal, it is a handy communication tool nonetheless.

47 Hot5

If you're always moaning about not getting time to exercise, Hot5 will oblige by showing you 5 minute exercises that you can perform anywhere, anytime. What's your excuse now?

48 FIFA 14

The football fans out there will play nothing else.



49 Dice Player

Media players are a dime a dozen, but media players that will create and maintain a persistent window are very rare indeed. This is one of those rare ones.

50 Fitocracy

The gamification of a fitness regimen is always a fun prospect and that's exactly what this app does. Now, as always, it's only your will that's in the way.

51 Flava - Note/Journal

As mentioned on its web site, Flava literally is a fun and quirky journaling app, giving you complete control of your own biography in a fun and unique way.

52 Fenix Box

A surprisingly addictive rogue-like puzzle game this. Fenix Box expects you to finish the game in one-sitting, if you stop, you have to restart from the absolute beginning!

53 Google Docs

We do wish that the ability to edit docs was still a part of Google Drive, but it isn't, Google Docs is just as essential as Google Drive.

54 Clear

An efficient task manager is hard to find and even if we do find one, we clutter it up so badly that we can't make sense of it. Clear, clears everything up for you.



55 Flow Free

The premise couldn't be simpler—you fill up a grid with coloured pipes that shouldn't overlap. The game is simple to pick up, extremely addictive and gets very challenging later on.

56 Granny Smith

Granny Smith loves her apples and a skating thief swiped them. Luckily Granny Smith is a ferocious skater herself.

57 Google Translate

A world that speaks more languages than you have fingers and toes requires something that will help that world communicate – Google Translate.

58 Bastion

An award winning game, Bastion has received a lot of praise for its art style and music and is already a best seller on every platform.

59 Camera+

Camera apps are many in number, but there are few as good and as comprehensive as Camera+. The app ensures that you make the most of your phone's camera.

60 Adobe Photoshop Express

Adobe's Photoshop is probably the best editing tool for PC out there, and Adobe Photoshop Express aims to be the best image editing tool on a mobile platform.

61 AutoMeterFare India

Freeing you from the terror of not knowing the one, true rickshaw fare is AutoMeterFare. The ultimate app for all you rickshaw goers out there.

62 Astrid Task List/To-Do

A social task-list is exactly what you need if you spend a lot of time procrastinating.

63 IMDB

Everything you ever wanted to know about movies, the actors and actresses and any other random bit of trivia can be found at this one location. And there's an app for it.



Links for Apps from 1 to 55

64 Duolingo

Want to learn a new language but can't find a tutor who's available at all odd hours of the day? Never fear when Duolingo is at hand. Learn languages on the fly at any time, day or night.

65 Amazon Kindle

The best reading app on the planet? Possibly. The Kindle app is essential for any book lovers out there because it's the most fully-featured book reading app out there.

66 BookMyShow

If you want to watch movies, you book your tickets via BookMyShow. It even gives you an e-ticket, so you can avoid all those long queues.

**67 Cognitile**

Put your ludicrously short attention spans to the test with this app that will take advantage of your short term memory (or lack thereof) to help you improve it via puzzle solving.

68 Contre Jour

A puzzle game that is equal parts beautiful and challenging is a hard find. This one involves orbs and gravity and a bit of nudging. Play it to find out more.

69 Instapaper

Claimed to be the "simplest way to save and store articles for reading: offline, on-the-go, anytime, anywhere, perfectly formatted", and we're inclined to agree.

70 ES File Explorer

An app that isn't just what its name suggests, ES File Explorer is an all-in-one file manager, app manager, task-killer, download manager and more. Your phone needs this.

71 Aviary

Aviary is a photo-editing app that alleviates that burden by offering excellent one-touch enhancements, and more.

72 Angry Birds

Do we seriously need to tell you what this is?

**73 Avast! for Android**

The best, free anti-virus for PC might just be the best, free anti-virus for your mobile. Packed to the brim with mobile-specific

features, this security app offers just might be what your phone needs.

74 Doodle Jump

There might be an endless list of endless runners now, but there is only one, true, endless jumper and that's Doodle Jump.

75 Amazon App Store

Android is the dominion of Google, but that's only because no one has picked up the mantle yet. No one that is, except Amazon.

76 Hike

You can dismiss this as an Indian WhatsApp clone, but there's more to the app than meets the eye as you actually get free talk-time and even free SMS to send.

77 Ninja Chicken

Live the dream, collect acorns, lay eggs at precisely the right time and utter your war cry with abandon ("buq buq buq"), the dream of being a ninja chicken.

78 Zombie Run

Here's an app that's not for the faint hearted – literally. Not only does it make you believe you're being chased by zombies, it actually expects you to *gasp* run! If you are a fitness freak, this one's a must-try.

79 Unstuck

Hitting a roadblock, metaphorical or real, is something that happens to all of us. In this digital age however, you're never alone. Unstuck will help you get yourself out of that rut.

80 RunPee

You're in a theatre watching a movie, and suddenly need to pee. Obviously your bladder takes priority. Thankfully, RunPee tells you what you missed while away. Better yet, it tells you when a boring part is coming so you can pee and not miss much.

81 Viber

Viber is WhatsApp with the additional benefit of voice calling. It's also on all platforms (even Bada), but for some reason not as popular...

82 Little Crane

Ever wondered what it'll be like to handle a crane in real life? It would certainly be hazardous in real life, but you can get through the teething phase with this nice little app.

83 Spirits

A puzzle game where you have to get little spirits into the spirit-world by helping them traverse all sorts of obstacles. Save as many as you can by sacrificing a few and completing the level with the recommended number of spirits.

84 Moves

How many steps a day does it take to stay healthy? 10,000. How many steps have I taken today? 183. <groan>. That's what Moves is for, to keep you on your toes.

85 Magzter

If you're in the habit of reading magazines, there is no way you can transition to the digital world without this app; the most comprehensive magazine store out there.

**86 Word Search**

A screen full of letters, multiple words hidden in all the random gibberish... Can you find all the words? Can you find more than people across the globe?

87 SoundWave

On-demand music has, in a way, killed the joy of music discovery. SoundWave might change that by seamlessly tracking you and your friends' music and giving recommendations.

88 Zite

For those of you who don't like Flipboard, there's always Zite (owned by Flibboard now anyway). It gives you a consistent reading experience and more numerous sources for updates.

89 Pact

Put your money where your mouth is, not your food. Decide on a diet, make a "pact" with the app, if you don't reach your goal, you forfeit the money. If you didn't, your money is forfeit. Motivation, pure and simple.

90 Max Payne Mobile

Oh come on, it's Max Payne on a mobile. Of course it's good. Just download it already!

91 Couchsurfing

The gateway to a social network that'll actually get you off your arse, Couchsurfing is home to a global community of people who enjoy travel.

**92 Shadowgun**

Among the best 3rd person shooters on the mobile platform, Shadowgun combines a lengthy and enjoyable campaign with intuitive controls.

93 Minecraft: Pocket edition

Building the known world with blocks is a daunting prospect, but Minecraft ensures that you're up to the task with its engaging and captivating gameplay. Once you start, you can't stop.

94 Opera Coast

Opera Coast is a browser that'll leave you "wondering why browsers weren't like this before". It's one of the most intuitive and convenient browsers to use today.

95 PenUltimate

The iPad was designed for fingers, but what if you could really use a pen with your device to take notes? Find out.

96 McPixel

Dark and quirky are a risky combination as games like this usually end in disaster. Not so McPixel, a game where failure might actually be more desirable than victory.

**97 PixiTracker**

Reading music is difficult and creating it even harder. However, if you still want to create music, all you need is PixiTracker and a knack for pattern recognition.

98 SpeedTest

Test your Internet speeds and know if your ISP is giving you what it promises. An essential tool for anyone with an Internet connected device.

99 Pocket

A voracious reader will definitely appreciate the comfort of having their entire reading list in one app and what's more, have it available on-demand, with or without a net connection.



Links for Apps from 56 to 110

100 Kingdom Rush

Fight off the demon hordes in this artfully designed tower defence game. Great graphics and great gameplay make this an excellent option for fans of the genre.

101 Paper Camera

You may not be very great at sketching, but you can still show-case seemingly amazing pencil sketches. How? This app takes images that and processes them into pencil sketches.

102 Vector

Vector is an arcade-style game where you are a talented free runner (Parkour) who's running away from "Big Brother" in an attempt to stay free and bring freedom to all.

103 Super Hexagon

Super Hexagon's beauty lies in the utterly relentless pace of the game, where you have to move a small triangle around while trying to find a gap through the walls closing in on you from all sides. This is not a game for those who give up easily.

104 The Bard's Tale

You'd never expect to play a full-fledged 3D RPG on a mobile, but here you go. With great humour, action and long quests, there's brilliant entertainment for you here.

105 Reddit is Fun

Yes it is. We heartily agree. But it's a pain to browse on a mobile phone and this app changes that by presenting a better, cleaner interface that's more suited to mobile phones.

106 Wattpad

Bored of all the same old fiction and famous authors out there? Wattpad gives you over 10 million books and stories from amateur authors across popular genres such as sci-fi, fantasy, mystery, romance and more.

107 SoundCloud

If Instagram is for sharing images then SoundCloud is for sharing audio. It's a kind of social network and sharing platform that's built exclusively around audio.

108 Plants vs. Zombies

The zombies really have eaten your brains if you need to be told what this is.

109 Yahoo News Digest

Like all digests, this one is also a summary of all the important happenings from across the globe, all that matters when choosing a digest is finding an editorial voice that resonates with you. If Yahoo! does, get this.

110 Office Mobile

Microsoft has finally relented and released their Office Suite for mobile platforms, and it's surprisingly powerful and comprehensive. You do need an Office 365 subscription though.



111 Mailbox

If Google introduced us to the joys of e-mail, Mailbox introduced us to the comfort of e-mail management. This is by far the best mail management app for iOS.

112 IRCTC

Why would you wait in line for a ticket when you can book your app online? Better yet, you can even book on your mobile phone. Welcome to a modern India.

113 Speedview

Google Maps is nice, but what if you just want to know your current velocity or your average distance travelled? SpeedView will help you with this and more.

114 ThinkInvisible

A fascinating look at the intricacies of the human imagination, ThinkInvisible presents you with only abstract portions of a picture and leaves it up to your imagination to fill in the rest.

115 Rail Maze

Put your path-finding skills to the test with this puzzle game that'll have you sorting through a maze of mismatched tracks to get your train to its destination.

116 Line Birds

An avian take on the classic "chopper" game, line-birds gets you to guide tiny birds through an obstacle course of ever-increasing complexity and danger.

117 Whisper

A social network based on honesty and trust? Impossible you say? Nay! Whisper is that network.



118 Paper by 53

You're always told that you can draw stuff on a digital device, but no app has never been practical. No app that is, till you experience Paper.

119 Quora

Ask questions and receive answers. Only this time, you can hope for intelligent answers, if you're on Quora.

120 Snapseed

Adding filters and tweaking images is all well and good, but this Google product is actually a feature-rich and very advanced image processor with some impressive capabilities.

121 Quiz Up

Don't you want to showcase your blistering intelligence to the world? Now's your chance! Grab this app, answer questions and level up. The higher your level, the more are the mortals that will kneel at your feet.

122 LinkedIn

A social network that's meant to separate your social life from your professional social life is what this is. It's a great place to find and meet work-related contacts, and even jobs.

123 SkyForce Reloaded

This top-down shooter has been around since Nokia's glory days with the S60 platform. Nothing has changed in this Android iteration and we're glad of that because this is still the best top-down shooter we've played.

124 Wordament

For Windows Phone users who wish they had Ruzzle – here's a 4x4 grid of letters that you swipe horizontally, diagonally or vertically to form words. Simple and fun.

125 Swiftkey Flow

With great word prediction, Swiftkey Flow is a must have, as it gives you both typing and swiping methods of input without needing to add spaces, and also supports Hinglish!

126 What's On India

This is an app for those whom TV a legitimate form of entertainment, or if there's just a show they don't want to miss. It provides complete TV programming

as well as SMS and e-mail alerts for your favourite show.

127 ZOMBIES (on teh phOne)

ZOMBIES (on teh phOne) is a birds eye view shooter where you aim to avoid zombies and being "dedz". It's childish, it's fun and it has Zombies, what are you waiting for?

128 World of goo

World of Goo by 2D Boy is a point and click physics-based puzzle game where you create large structures using goo balls and then get them to escape through the pipe. Great sense of humour awaits, begin download.

129 Pizza vs. Skeletons

It's an unusual weapon, but a Pizza is a zombie's worst nightmare. Don't believe us? Try the game for yourself and find out.

130 Words with Friends

Words with Friends is for all Scrabble junkies who would rather do nothing but form words out of the letters provided. It's multiplayer, made by Zinga, so beware the addiction monster.

131 Lumosity

People talk about apps turning people and kids into zombies and other such nonsense. Lumosity won't, don't worry.



132 uTorrent Remote

uTorrent Remote be every pirate's dream. If you're tired o' bein' stuck asea in fore o' your PC when piratin', now you can be a-piratin' when roamin' like the land lubber you be.

133 Quickvoice recorder

Few recording apps offer the simplicity that QuickVoice offers. Recording audio is as simple as the tap of a button. Too bad it's only available on iOS.

134 Little Things

Putting your visual acuity to test is what this app all about. You need to identify tiny little objects from a collage of frustrating complexity. The game is rewarding and fun however.

135 YouTube

We need to tell you what this is? Like, seriously? Even Charlie Sheen, Miley Cyrus and Indian politicians have heard of this one...

136 2048

Slide and swipe through the blocks to add their values up to 2048. A test of skill and math at the same time.

2048

137 Paper Monsters

If you like 3D platformer games that are leisurely paced, with characters made of paper, in various geometric shapes and the satisfaction of watching very large bosses die, download this one.

138 Major Mayhem

With excellent graphics, this interesting shooter challenges you with the gameplay and enthralls you with the graphics.

139 Clumsy Ninja

You've never known the joy of owning a pet ninja till you've played Clumsy Ninja. You can throw him, punch him, and tickle him and much more.

140 Storm Raiders

Put your dog-fighting skills to test with this epic war game. Take to the skies in the Spitfire and other assorted aircraft and show 'em Jerry b*****s how it's done!

141 Smash Hit

All you do in this game is throw balls and smash glass. Simple. Fun. Addictive.

142 Super Swiss Army Knife

This leverages the functionalities of all your phone's sensors to give accurate readings. You get a compass, flashlight, magnifying glass and loads of other tools in one.

143 Slayin

Harking back to the days of the NES and other 8-bit and 16-bit games, Slayin sets you loose on a horde of otherworldly scum in a hack-n-slash frenzy of vintage proportions.

144 Tab Pro

A must have for any guitarist who uses tabs, this app will give you access to tabs for over 80,000 songs, slow down tempo, show you how to place your fingers on the fretboard and even lets you play along.

145 Riptide GP

Racing on roads is fun, but racing on water is even more chaotic and fun. Riptide GP gives you a taste of arcade jet-ski racing.

146 Skype

Skype's more than just an option for video-chatting, it's now a very powerful and feature-rich communication tool that your phone should not be without.

147 Expensify

If you're, well, human, you probably have trouble keeping track of your expenses. Expensify lets you scan receipts when they're generated, create reports, and basically track and reduce expenditure. Available on all platforms.

148 Jetpack Joyride

Running amok through a scientific facility while raining bullets down on hapless scientists with a jetpack that fires said bullets is loads of fun.

**149 The Walking Dead**

More zombie madness, based on the now hit comic, The Walking Dead. This is an action game that doesn't need you to do silly things like run and gun, instead you click on prompts and select which direction your character is headed by choosing what to say.

150 Justdial

The definitive local search engine just got an app. The app is available on iOS and android and lets you search for local services, businesses and products in India.

151 Pixlr-o-matic

Instagram might be known for its filters, but so is Pixlr-o-matic. The only difference is that this one doesn't resize your images to apply filters. A big plus in our book.

**152 TED**

When you think inspirational videos, you can't help but think TED. Access the entire TED library from your phone, and share the videos you like with your friends.

153 MiniSquadron

Performing a loop-the-loop is well and good, but it does little to save you from that laser-wielding UFO. An addictive 2D air combat game just can't get better than this.

154 Superbrothers : Sword & Sworcery EP

An adventure game with beautiful pixel art, excellent music, and arguably the most beautiful adventure game there is. Best enjoyed on an iPad and headphones.

155 Tweetcaster

Want to post to Twitter and Facebook at once, and also manage and post to multiple Twitter accounts? Get this, regardless of whether for phone or tablet.

156 Telegram

What if you don't like WhatsApp, and want something more secure? Telegram offers group chats with 200 people, videos up to 1 GB in size and unlimited cloud storage of your media, plus secret encrypted chats if you want that.

157 Twittrific 5

Not satisfied with official apps? Are a twitter-er-er-err? Spent a lot of money on iOS devices? Need an iOS only app to show off? Get this. Android users can try Carbon, WP users Rowi for the same coolth.

158 m-Indicator

While a true-blue Mumbaikar might know local train timings and bus-routes and rickshaw fares by-heart, everyone else might not and this app is for them.

159 Rise alarm clock

Waking up to an alarm clock is a torture most of us endure. But maybe waking up to an alarm clock that looks elegant isn't so bad. At least, that's what the makers of Rise might have you believe.

160 Vine

Twitter made you shorten your words, Vine makes you shorten your videos to 6 seconds. Now owned by Twitter, hopefully we will see it come to more platforms than iOS.

161 Zomato

If you like food you've probably already got the Zomato app or visited their site at some point. If not, can you show us the rock you were living under?

162 StudyBlue Flashcards & Quizzes

Get access to notes from over 5 million students accessing 250

million classmate-created notes. Of course, only what your own classmates are learning is of any importance to you, so get them all to download it as well.

163 Rayman Jungle Run

Fantastic side-scrolling platforming awaits you in this wonderful alternative to Rayman Origins. Only pure skill and blind luck will get you to the end.

**164 Into The Box**

This game has you diving through concentric rectangles at an ever-increasing pace. How far can you go before you throw up?

165 TeamViewer

Yes, the TeamViewer app for Android and iOS is just as awesome as the one on your PC. Don't even bother with anything else if you need remote access.

166 Plague Inc.

You get to play a mad scientist that unleashes the world's most potent and destructive disease on the planet. What's not to like?


167 Light Flow

This app puts that boring old LED on the face of your Android phone to work by giving you the option to completely customise its response based on your preferences.

168 Tonido File Access Share Sync

Access your PC from anywhere, share files, stream movies stored on your PC, etc. Basically if you want access to your media library and files on your phone, this is the app for you.

169 WhatsApp

WhatsApp, often spelt "19 B I L L I O N U S D" is a messaging application that's cross platform. Actually, scratch that, it's THE cross-platform phone messaging app. Period. 



Links for Apps from 111 to 169

2

PEOPLE

13 Teenagers Who Are Changing The World

Technology has always been the bastion of the young, and to celebrate our teen birthday, here are some impressive teens

Samir Alam

1 Nathan Han

The most recent whizkid of our generation, Nathan Han, a student of the Boston Latin School, proved his intellectual mettle by placing first at Intel's International Science and Engineering Fair in May 2014. He used publicly available databases on gene research to examine the characteristics of the various mutations of the BRCA1 tumor suppressor gene to create his software. Using the data this software was "taught" how to differentiate between different gene mutations in order to spot the ones that cause cancer. His inventive approach to mixing biology, software and statistical analysis has presented scientists with a whole new way of fighting cancer. Nathan looks just like any 9th grader, but has already made his mark on the world. He's shown that with imagination, support and determination even the most amazing discoveries can be achieved from just a teenager's laptop.



2 Sara Volz

Sara Volz was just 17 years old when she won the Intel Science Talent Search in 2013. Humorously known as an algae enthusiast, she cultivated an algae experiment under her bed. At the time she was a student of Cheyenne Mountain High School in Colorado Springs where she was just about to graduate when her project won her the Talent Search and a \$100,000 prize that she used to go to the Massachusetts Institute of Technology. The young researcher has gone on to advocate for the cause of algae based biofuels as a replacement for fossil fuels by speaking at major event including giving a TED Talk. Her biggest



impact is expected in her work towards developing ways to make algae-based biofuel more cost effective and efficiently produced by using "artificial selection" techniques to grow algae. Her commitment to the field has already shown potential to radically change the world and she's only getting started.

3 Ari Dyckovsky

Ari Dyckovsky began solving complex mathematical problems at age 4 and by 18 was dabbling in the field of quantum physics at the Loudoun Academy of Science. At 18 he published a paper in the "Physics Review A" that shattered the ceiling on research being done towards the creation of quantum computers and quantum entanglement. He intends to create an instantaneous data transfer technology which would solve the problems of speed and security. He dropped out of Stanford to start a company called Arktos. He's taking on giants such as Microsoft by creating cutting edge data visualisation programs. Dyckovsky's innovations have already altered the expanse of science and technology.



4 Angela Zhang

As a 15 year old student in the 9th grade Angela Zhang began taking an interest in bioengineering – by the time she was in 11th grade she had won USD 100,000 at the National Siemens Science Contest for her science project on devel-



oping a cure for cancer. With access to research laboratories in Stanford, she spent nearly a thousand hours of research before successfully creating a nanoparticle that is capable of attacking cancer cells and also providing diagnostic information. She even figured out how to combine cancer medication within a polymer attached to these nanoparticles. Early testing has proven successful in rats, and in a few years she could be credited with curing cancer!

5 Taylor Wilson

As a 16 year old, Taylor Wilson won a host of prizes at the 2010 Intel International Science and Engineering Fair with his project titled "Fission Vision: The Detection of Prompt and Delayed Induced Fission Gamma, Radiation, and the Application to the Detection of Proliferated Nuclear Materials" (that's a radiation detector to us common folk). The US Department of Homeland Security and the US Department of Energy offered him funding to build a low-cost Cherenkov radiation detector for border security and anti-terrorist threats. Wilson then went on to become a bona fide nuclear physicist at just 18! He's working on a low-cost waste fueled nuclear reactor his main priority.



6 Ionut Budisteanu

Ionut Budisteanu is a Romanian high school student who invented a self-driving car. He won a \$75,000 scholarship and had many more wins around the world. He used artificial intelligence programming to make a car that is far less expensive than those being developed at Google. His design costs a mere \$4,000 (₹2,40,000) whereas other designs that perform similarly cost upwards of \$75,000. By using five laptops – four for real time data collection and the fifth for artificial intelligence based decision making – Budisteanu was able to create a program that could take data from low-res 3D LiDAR (Light Detection and Ranging) in the form of traffic movements, roads, pedestrians, obstacles and other factors to safely and quickly navigate a car. He is also in the process of creating a revolutionary mobile app that will allow blind people to walk about with ease.



7 Brittany Wenger

As an 11th grade student Wenger took her interest in computer programming and applied it to cancer, and wrote an algorithm that has 99+ percent cancer detection rates! Her research project was titled “Global Neural Network Cloud Service for Breast Cancer” and won grand prize in 2012 at the Google Science Fair. By 2013 she had advanced her neural cloud network program to include leukemia detection and won multiple awards including Intel’s Science Talent Search. Her program is designed to use aggregated data from biopsies all over the world to learn how to detect malignant tumours and cancers in the human body. The Cloud4Cancer service, as it is now known, is globally available for free. This means millions of patients across the globe will have less painful and invasive surgical tests, and be diagnosed earlier. Her work will save millions!



8 Kelvin Doe

Kelvin Doe is a self-taught engineer and inventor from the war-ravaged nation of Sierra Leone who used his natural talents to improve the lives of the people in his community. By 11 he was sifting through garbage heaps looking for electronic components that he could use in his social inventions. At 13 he was able to build a fully functional battery by using discarded materials in a tin cup wrapped with scotch tape saving his community large sums on battery costs. Next he built a generator using scrap and trash. At 15 he became famous thanks to a YouTube video, and was invited to become the youngest “visiting practitioner” at MIT. He has gone on to lecture students at MIT, Harvard and other universities as well as been a speaker at TED. Apart from his technological work, Doe is also famously known as his on-air avatar DJ Focus spinning records on a pirate radio station he started with his friends in Sierra Leone. That’s one cool 15 year old.



9 Alex Godin

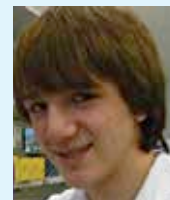
Cementing his reputation as more than just the son of marketing guru Seth Godin, the 19-year old has accomplished more in his final years of high school than most teens do in their whole career. As one of the youngest persons ever to be accepted into the highly exclusive TechStars program at the age of just 17, Godin has made waves in the startup tech industry across the world. The technology whiz kid had a highly successful startup known as Dispatch right out of high school and went on to raise more than USD 1 million in initial seed funding. The company broke right into the enterprise market with its program during the TechCrunch Disrupt Hackathon. Originally titled Dispatch.io it began



as a Chrome browser extension that converged the services between different cloud services such as Dropbox and Google Docs. The extension went on to become an enterprise service and was acquired by Meetup. Before he dove into building his own tech startup Godin was already doing interesting things such as running a DJ business, producing documentaries, teaching himself how to code, taking on an internship and planning for college. He’s put off college for later.

10 Jack Andraka

Jack Andraka made major breakthroughs in detecting deadly pancreatic cancer at just 15 years old! He devised a test that is 90+ percent accurate in detecting pancreatic cancer, but at a fraction of the cost of existing methods. He used a paper sensor to detect the presence of mesothelin (a cancer indicator) in the blood of patients. Cost? 3 cents! He won first prize at the Intel International Science and Engineering Fair in 2012. He’s using the money to go to college and make some serious changes to our world.



11 Luis Fernando Cruz

This 19 year old student of electrical engineering invented the Eyeboard, which is an eye-controlled software that allows disabled people to use technology at a cost lower than that of an iPhone. By 14 Cruz started learning programming and the basics of digital electronics. By 16 he became the first video game system developer in Honduras. He shifted his focus from business to social entrepreneurship and by 19 had made the Eyeboard. It tracks eyeball movements of disabled people to form words on a screen as well as operate a computer device. His goal is to make this device available to all those who need it around the world. He wants disabled people to communicate and live in the world with dignity and respect.



12 Chiman Prakash Reddy

Sometimes reinvention is the greatest sign of genius and that seems to be the case for Chiman Prakash Reddy from India. This 16-year old from Hyderabad has no formal education, but has demonstrated amazing skills in chess and electronics. He’s the youngest ever creator of a PC tablet in the world – he made is responsible for the invention of the AVE 7-inch tablet which garnered the interest of mobile services giant Reliance Communications in India on its release in 2011. The teen inventor has even incorporated his innovations in a business venture based out of the UK called Sareddy Technologies where the Chinese built components are assembled. Truly a global entrepreneur and inventor.



13 Nick D'Aloisio

One of the youngest employees of Yahoo, Nick made his millions before the age of 17. The programming prodigy is younger than Yahoo, but ended up getting \$30 million from them when he sold them his remarkable app called Summly. D'Aloisio created the news-reading app from an algorithmic system that he devised which allowed users to read long form stories in a brisk and convenient way



on their mobile devices. After Yahoo! bought his app, he was offered a position at the company. He’s still devoted to finishing high school and works part time. This boy wonder, millionaire is only just getting started, and is using his money to research new ideas while he gets a degree in Philosophy from Oxford. 📖

3

CORE TECH

13 Technologies to watch out for

A couple of months ago we covered 5 technologies that will be making waves in 2014. Now we have a mega list with 8 additional ones to watch out for.

Samir Alam

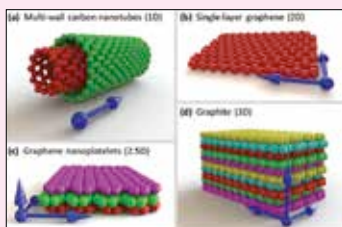
1 Brain-Computer Interface

The barrier between machine and mind is narrowing as research into brain-computer interfaces hits high gear. Researchers at Duke University have already moved to connecting the brains of two mice over the internet. The mice located in different countries were able to use this “brain net” to collaborate towards solving simple tasks for rewards. Another experiment found success when Harvard researchers connected a rat and human brain using non-invasive techniques. The most ground breaking work was done when false computer based memories were transplanted into a mouse brain at MIT. The technological implications are staggering and will completely alter the way in which we interact with computers.



2 Nanostructured Carbon Composites

Nanostructured carbon composites could hold the key to addressing three major concerns facing the world – reducing our carbon footprint, improving passenger safety in vehicles and not polluting the environment. Their use in manufacturing can reduce the weight of vehicles by more than 10 percent. This small change has serious fuel efficiency consequences and can help reduce carbon emissions. In addition to which the light weight material proves to be highly impact resistant due to its surrounding polymer matrix making vehicles safer for passengers. And most of all, it's designed to be easily reusable and not be discarded as a pollutant. A singular answer to our environmental problems with cars.



3 Adaptive Technology

Wearable technology isn't just about Google Glass and Nike+ sensors. The real emergence in wearable adaptive technology takes place in its seamless integration to our human-experience. From the use of temporary tattoos that track vitals, to foot sensors that guide the blind using vibrations and GPS – the potential for these products is more than a style statement. The most recent breakthrough in this field is the creation of the Single Pixel Contact Lens, that provides users with a Heads Up Display without any external accessory. This microscopically designed contact lens prototype is only the beginning of how technology is being adapted to the human experience to serve human needs.



4 High Density Batteries

Current lithium-ion batteries have reached their limit of energy density (energy per volume) and can't address upcoming energy concerns. New developments are underway to increase energy density - from nano-component based lithium batteries to lithium-sulphur batteries which seek to increase their limit exponentially. These new batteries will make products like emerging systems, long distance electric cars, wearable technologies and even home based solar energy generators to become the norm. This new generation of high density batteries can make even the most impoverished societies energy efficient and improve the lives of billions across the world.



5 Manufacturing at Home

Consumerism with all its benefits and flaws has remained largely unchanged due to mass production since the industrial age and. Products are created in bulk for cost effectiveness and distributed via various channels to consumers. However, the next generation of consumerism is here with additive manufacturing a.k.a. 3D printing taking hold. The ability to create complex and useful items such as decorations, crafts, tools, food and even medication via 3D printers is slowly being developed. In the emerging age of customised individualism manufacturing most of your goods from the comfort of your home will change how people consume products making the term “mass produced” obsolete.



6 Marine Metal Mining

Two of the biggest crisis facing humanity are those of our dwindling potable water supply and declining natural resources. According to researchers, the ocean might hold the key to these problems. Developments in marine mining technology using catalyst assisted chemical engineering techniques have shown promise. This process not only purifies seawater to create a drinkable water



supply but also allows us to harvest minerals from the leftover brine waste. The brine waste created can be used in offsetting the high cost of making potable water as it will help us mine elements like lithium, magnesium, uranium and other high value minerals in one singular process.

8 Deep Learning Machines

The first step to creating an artificial intelligence is to find a powerhouse of computing and data storage. By employing a vast resource database of information, a machine can be programmed to learn independently by understanding language, and then making inferences and decisions. In today's internet driven world, companies like Google already hold the vast amount of computing power and storage needed and by partnering with researchers like Ray Kurzweil we already have an ongoing project that seeks to create a "deep learning machine". These software driven machines are structured to mimic the activity of neurons in the human neocortex to learn patterns in all forms of digital input to slowly become autonomous.



10 Screenless Display

Display screens are changing from objects that are looked at, to being a naturally organic extension of an users field of view. Innovations like Google Glass and Oculus Rift – use augmented reality and realistically created digital worlds respectively and are changing the way we interact with the world. The next wave of innovation in three dimensional holographic projection displays will further blur the line between our real and digital lives making screen-less displays our window to the future.



12 RNA-based Therapeutics

Innovations in the development of pharmaceuticals and other treatment technologies is another aspect of medical sciences that is undergoing a sea of change. Scientists are dedicated to unravelling the power of the RNA component biological specimens so they can create ever more powerful medical drugs and treatments. Targeted RNA therapies are being tested to preemptively disrupt the occurrence of diseases by blocking their messenger signals – this could lead to cures and treatment for cancer, tumours, heart disease and hepatitis virus.



7 Augmented Humanity

The highest potential of technological development is always its eventual invisibility. From electricity to mobile devices, we take the greatest modern technologies for granted due to their seamless integration into our lives. The next step in this evolution is for humans themselves to become carriers of technology which aid in our day to day lives. By "hacking" the mysteries of the human body scientists are looking for ways to create technologies such as bionic implants and exoskeletons that will change the way we live forever.



9 Grid-scale Electricity Storage

The requirement of energy and storage is the biggest issue in the world. To tackle this crisis, the development of grid-scale electricity storage has taken off with live projects around the world in places like Japan, Spain, United States and Europe - many of them showing immense potential. Using diverse technologies like high storage batteries, solar to thermal storage, molten salt storage and superconducting magnetic storage, innovators are not far from standardising a safe, reliable and efficient storage for the world's energy needs.




11 Human Microbiome Therapeutics

Medical sciences use cutting edge technologies to save lives everyday. But the use of human microbiome therapies can take it a step further by altering the very foundation of biological existence - at the gene level - to augment microbes within the human body in order to influence human biology. By harnessing the power over these microbes, scientists can



improve healthcare in a variety of ways such as treating diabetes, obesity, improve nutritional consumption and even defend against diseases such as cancer.

13 Quantified Self (Predictive Analytics)

Our real lives are intertwined with our digital lives - our medical data, our communication habits, our movement patterns and even our thoughts and feelings - form a quantified version of ourselves. By using powerful analytical algorithms, we can soon expect to find valuable results from our quantified selves. These millions of data points from our lives will soon provide us with a predictive analysis of all our needs in healthcare, work and lifestyle - to make our lives better. After all, that's what technology is primarily for. 





APPS

13 Apps that will make you rich

There's a lot of opportunities for app innovation out there. Here are a few app ideas that aren't out there that we thought should be (please note: we reserve ideation rights for all of them):

Team Digit

1. The Definitive Gaming



It will use Steam APIs to pull and present tons of data in a meaningful way. Consolidated progress bars for games, estimated time to finish

your library, game filters, "does it have trading cards?" answer in simple yes or no. And many other data visualisations for game achievements and other data points. Similarly, monitoring your gaming across Xbox Live, PSN, u-Play and Origin.

2. Remember, remember



Well with so many corporation manufactured "days" it's difficult to keep track of. The app will simply tell you if

today is "Earth Day", "World Pizza Day" or "World AIDS Day". It will also source additional information from wikipedia about major events that took place on this day, historically. For example: <http://dgit.in/may23imp> In the indian context, the app will also give you detailed tyohaar information and mark out the dry days (amongst other details).

3. AI reminders



An app that monitors calls, listen for, "OK I'll send that to you by 6" – or any such phrase indicating a commitment – and adds it to the user's calendar

or to-do list. Along with a reminder telling me that you made X commitment to Y under some circumstances. Maybe even warn you that you have overlapping commitments. This

can be a great add-on to monitoring emails and texts for the same purpose. A 24/7 AI assistant, as it were.

4. The Phenku Meter



Everyone's got that friend who's infamous for faffing. But the real hair-tearing issue with these people is not catching

them in the act. The phenku meter would let you do exactly that. Simply press record when he/she is at it, and let the app search online and do some good, algorithmic fact-checking on your behalf. When it's done, show your friends how much of a phenku they really are.

5. The Lying Wingman



The Lying Wingman would be an app that adds ambient sound to

your phone call, which can be set to any kind of location you choose. Traffic, Lumber mill, maybe a gentlemen's club – so that you can pretend to be somewhere you're not. Making your excuse a lot more credible. Gone would be the days when you got delayed playing Half-Life and couldn't lie to your boss successfully. Let your partner-in-crime assure your authenticity.

6. Do I know you?



Do I know you would be an app which scans the facebook database to give you more details about

people adding you. It would connect with facebook's identify a face engine, your LinkedIn account and finds you a logical link to said person, thus telling you who this person is and

how you're supposed to know them. This would come in handy because with the number of people you meet today, it's really hard to keep track of everyone – and people rarely need more than a 20-second meeting to add you online.

7. Asset Vault



An app that has access to all your financial data and services, making

it easy for you to do anything business-related from one app itself, without the hassle of switching between them. Make transactions between multiple bank accounts, credit card details, access to your stocks and bonds. The app can also have a small messenger service to keep in touch with your stockbroker. It can also incorporate services like financial advice bots, stock exchange updates, etc. The app will obviously be heavily encrypted.

8. The Etiquette App



The app would have complete access to your phone's microphone and keypad. It would monitor

how often you are nice and how often you swear or insult people. It will also try to keep a track of whom you're being rude to. The data can be checked by the user by checking his daily scoreboard. The app would have to be available in different languages, keeping the culture in mind to be more accurate. An advanced version of the app could also monitor voice patterns and see how often you get angry or annoyed.

9. The Global Translator



There are several translator apps out there, but none are capable of real time translation. The Global translator is an app that would

translate between text and speech with minimal (almost negligible) lag. Effectively, it's a more realistic version of the Star Trek universal translator. The app will only be available to phones meeting some minimal system requirements, though. As intricate as the app is, the hardware requirements are equally demanding.

10. The Great Link



The Great Link is an app that would require wi-fi connectivity. This is meant for people in large

offices or public areas with not enough wi-fi routers to go around, keeping the range of available internet at a low. The Great Link would be an app that would connect people through other people to other people who are within range of a wi-fi router. Each phone working as a portable hotspot,

boosting the signal in a chain as long as the app is running. The app would work only with wi-fi connectivity, not data connectivity.

11. The Ultimate Gamepad



This app would (as the name suggests) turn your phone into the ultimate gamepad. Touch-based controller knobs, standard WASD keys and arrow buttons and to top it off,

turning your phone into a motion controller for PC and Wii games. The app can be reconfigured to your own specifications, allowing you to map the volume, power and home buttons. The phone would link to your PC and console using the TUG app, available on all platforms.

12. Indian Musician Database




Over the past score years, or so, keeping in touch with all the Indian bands cropping up out there has been getting harder by the year. There are

just too many of them, and even the music festivals have a hard time keeping up. The IMD app would be dedicated to keeping a track of musicians, both big and small, and the time and location of their live performances. Linking up with Four Square and your phone's GPS, this app would give you a list of band performances in the region you're in.

13. The Digit App



This is an app made by Digit that will read your mind and provide you with the information you're searching for even before you know you're

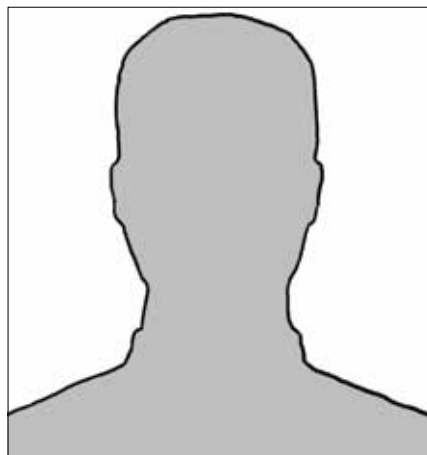
looking for it. We hear rumours that one particularly follically challenged member of our team is planning on creating one, but it's all vapourware for now, as far as we're concerned. Let us know if you spot this Unicorn of apps anywhere. And of course, if you're kind enough to want to help us build it, we promise to let you do all the work! 



APPS

13 readers who are changing India

Here's your chance to get famous and be featured in Digit, and all you need to do is help out the country using technology



This could be you

Are you worthy?

Have you done something so awesome for the betterment of mankind that people's jaws fall to the floor when they find out (no, interning at Digit doesn't count)? We're looking for the most innovative, the most creative and the most determined Digit readers who have worked really hard to make a difference in our country.

If you think you've done something good for the country, or your neighbourhood, community, college, home, whatever, send in your nominations to editor@thinkdigit.com with the subject line "I made a difference" and we'll feature 13 of you in this very magazine and on our web site as well.

6

Told ya so!

13 correct predictions Digit made

We play soothsayer all the time here at Digit, and although we've been proved wrong very rarely, here are 13 times we've been proved right.

We still have hope for advancements in AI, battery tech, nanotechnology, etc. However, the point of this article is not to just blow our own horn, but to actually lament that we didn't heed our own crystal ball concoctions and invest our time and money heavily in the very same predictions we're beating our chests about.

Of course, as writers we're used to stale food, tattered clothes and an existence within the cracks of society, but you, dear reader, could be filthy rich in the future. Here are 13 reminders as to why you should take the things we say more seriously:



June 2001

1 Embedded OSES will take over the world

Fast Forward to today and you will see that embedded OSES on smart TVs, phones, tablets, media players, NAS drives and even everyday routers are what you interact with more on a daily basis than any other kind of OS.



November 2002

4 Smartphones are the future and will replace desktops for most tasks

It's very rare, but we do get things spot on sometimes, and this is one of those times. For everyday tasks such as email, chatting, banking and even casual surfing, the smartphone has all but replaced the desktop.



July 2001

2 Streaming high quality video over the internet will be big

2005 YouTube is launched, 2006 Google buys it for \$1.65 billion, and it's one of the most visited sites on the internet. Watching videos remains one of the most popular activities of all time.



May 2003

5 Alternate displays – OLEDs, E-ink, foldable displays

We're still waiting for properly foldable or even rollable displays, but OLED and E-ink displays are certainly common today. Ebook readers, in fact, are almost entirely dependent on E-ink screens today. We still hope for more in display tech though.



April 2002

3 Film is dead

We predicted that everything would go digital "soon". The world was actually a little slower, but a couple of years later the exodus from film began, and today film is rarer to find than people with pet tigers!



July 2003

6 UAVs and Drones will command the skies

We'll admit, back in 2003 we were sure the skies would be patrolled and protected solely by UAVs by 2014! Although it hasn't happened yet, the use of UAVs for surveillance and drones for high risk strikes by the US is on the rise, and most of the world's superpowers are developing drones of their own.



December 2003

7 Convergence

Just to hammer the point home we also made Convergence our cover story in June 2005. The fact that the trend of devices being capable of doing much more than one thing will continue is a given. In fact even TVs are trying to be your desktop, and your phone is trying to become your significant other!



June 2004

8 EFI BIOS' to take over

Yes, we rang the death knell of the BIOS a little too early in our enthusiasm to embrace the cutting edge. However, from 2011 onwards UEFI took over to the point where it's almost the norm today. No new motherboard ships without UEFI now. How about the death of the OS as we know it next?



September 2004

9 Threats moving beyond the PC

We predicted that the simple PC virus would no longer be the biggest threat you, your data and your money would face. Your smart phones and wireless networks would be under attack. Thankfully security for OSes and networks is a lot better today than it was back in 2004, but most malware seems to be made for Android these days!



May 2005

10 The future of inkjets is manufacturing (3D printing)

At the time, we were pretty much the only ones going ga-ga over the thought of printing something other than paper. The term 3D printing came later, and interest sparked in about 2010, to the point where it's a field that holds a lot of promise for the future. Now imagine if you'd have jumped into it in 2005, wouldn't you be one of the world renowned experts everyone envied?

11 Touch screens on everyday gadgets

Yes touch screens existed before the iPhone, no they weren't cool or ready to take over the world before that. Which is why a year and a half later in early 2007 when we were at MacWorld when Steve Jobs showed off the iPhone prototype, we sat around smugly with our told you so face. Of course no one cared what some mag from the land of snake charmers had predicted, but you care, and that's why we love you.



July 2005

12 3D Displays in homes

We assumed there would be 3D displays in every home, and actually back then if you asked us, we'd predict holographic displays in living rooms a decade later, but sadly, the tech didn't keep up with our imaginations. Still, today, anyone can go out and buy a 3D display (if they can afford it), so that makes us right, again.



October 2005

13 Self driving cars

Back in 2006 we told you about Stanford university's self-driving prototype called Stanley, which was a project headed by Sebastian Thrun. He went on to join Google and head their driverless car research, and is integral to Google's Street View development. Let's just say self-driving cars are certainly not sci-fi sounding anymore.



December 2006



Nostradamus left you over **900 cryptic quatrains**, we leave you with over a **1000 pages** of cryptic (and not so cryptic) predictions.

You can find them all on the **Empower DVD**.



EDITOR'S PICKS

13 products you HAVE to own

Despite what some would have you believe, lust is a very natural and normal human emotion, and geeks are as susceptible to it as any human. Here are 13 gadgets that any self-respecting geek must own.

1 Olympus OM-D E-M1

When you've been working in the test centre for so long, few gadgets can impress you, let alone enamour you. But that's exactly what the oddly named OM-D E-M1 did to us. This is a camera that entranced us, sucked us in with its ergonomic charm and amazing image quality. If it's a camera you want, it's the OM-D E-M1 that you should get. This is a camera with amazing styling, excellent ergonomics and image quality, fast auto-focus, portability and a superb selection of lenses. The specs? A 16MP CMOS sensor, ISO 100-25600 support and more. What more could you ask for in a camera? This is deservedly a camera to drool over. It costs ₹1,00,000 but it's worth it.



2 BOSE QuietComfort 20i

Another product that caught us completely off-guard, the QC20i is one of the best IEMs (In-Ear-Monitors) that we've encountered so far. This is a set with BOSE's trademark understated aesthetic, but don't let the drab colours and awkward ear-buds fool you. The QC20i is among the most accomplished IEMs we've tested and despite the high-price, they deliver performance that is worthy of that price. And did we mention that those awkward ear-buds are very comfortable too? Sound quality apart, the most notable feature of this set is the active noise-cancellation that is capable of immersing you in an almost cathedral-like hush, on an aircraft, in the midst of traffic and even in the middle of a chaotic issue closing.



3 HTC One (M8)

It's hard to find fault with the M8. It's svelte finish is to die for and that brushed aluminium back is something you just want to caress. This device is not all looks though, the internals are top notch. Powering this device is a beast of a processor, the Qualcomm Snapdragon 801 (@2.3GHz), coupled with 2GB of RAM and an Adreno 330 GPU. The screen bears special mention, being a 5" screen that supports 1080p, you get a ridiculous 441ppi of pixel density. The result is a phone that looks lovely, is buttery smooth in operation and will make your neighbours and other geeks alike drool in envy.



4 iPad Air

The world of tablets is divided into two – a world of iPads and the also-rans. That said, the advent of the iPad Air can be said to have created a pre-iPad Air and post-iPad Air era. For Apple themselves to make an iPad that makes their own line-up till now seem irrelevant is quite a feat and all the more reason to get yourself one of these. Why wouldn't you want a tablet that weighs next to nothing, is blazing fast and comes with the awesomeness of Apple's stellar app ecosystem? There is no other tablet you'll want or need. The reduction in weight alone is worth the purchase of this device.



5 Sony Vaio Pro 13

Since you're a Digitian and reading Digit, you already know that the only truly powerful computing device you need (and probably have) is a PC. For everything else, portability is more important, but not a wimpy device though. The Sony Vaio Pro 13 ably fills those shoes. The 4th generation i7 CPU and 128GB SSD and slim design afford this device great power, portability and battery life. Ideal.



6 Marshall Hanwell

You don't have to be a guitar guy to know that Marshall makes some of the best guitar amps around, at the same time, you do need to be a die-hard fan of Marshall to know that they make speakers. You'll also have to be lucky enough to work at Digit, or be filthy rich, to appreciate what the Marshall Hanwell really sounds like. This somewhat large, black box can certainly pack quite a punch, and a tasteful one at that. There's nothing of the meandering bass and shrill highs that one would expect from most half-decent speakers. This is the real deal and if you're even remotely interested in music, you'll want one of these.



7 LG 55EA9800

There are too many TVs in this world. Way too many. How do you pick and choose from such an assortment of panels, sizes, brands and technologies? You do that by picking the very best of everything of course, and the LG 55EA9800 is just



that, a combination of the very best features you'd want from a TV. You get the very best display technology—OLED, you get a curved display, you get 55" of awesomeness and you get unprecedented bragging rights (you'll need to brag, especially if you're going to make up for the ₹10,00,000 that you'll sink into this). Hell, you can even pretend to have your very own IMAX setup. This may not be the sharpest of panels nor the highest resolution one, but it's definitely among the more interesting and immersive ones out there. Don't even think about getting anything else.

8 JBL Charge

If a geek festooned with gadgets is what you normally are, then the JBL Charge is your companion and your life-saver. This little cylinder will pump out chunkmungous decibels of sound and recharge your drained mobile batteries in a cinch. Anything that cuts down on your glut of gadgets is definitely something you want to add to your kit isn't it? And why not?

The Charge plays music and charges your devices and also gives you room for that one more gadget that you so desperately need to carry. Oh, and did we mention that the in-built battery has a capacity of 6000mAh? We're sure that you'll make good use of it.



9 Harmon Kardon CL

Music is more than a mere collection of pleasing tones, there's something primal about it. It's a universal language that everyone from an unborn child to a dried up old man understands and appreciates. Why this is so is not known; maybe it's something that harkens back to the creation of the universe itself, we are vibrating masses of quantum particles after all. Either way, music should be

treated with the reverence deserving of so ancient and primal a force and to do that, get yourself one of these, the Harmon Kardon CL headphones. Elegantly crafted from precisely machined parts and sand-blasted steel, this set is made by people with respect for their craft. Your ears deserve nothing less. Don't punish them with the creations of lesser beings.



10 Kindle Paperwhite

We book readers are a finicky lot. We're picky about the books we read, secretly narcissistic about our bookish knowledge and have a very stubborn purists when it comes to our preferred medium for reading (all hail that leather-bound tome). Amazon, in all its harvested wisdom, figured out a way to transcend these philistines to the digital era by introducing the one thing that they'd all secretly wanted. Digital paper and the ability to read in the dark! Book reading has never been the same since the launch of the Kindle and the PaperWhite.



11 Toshiba Canvio S3600-A

You do need to carry your data around safely and securely and for that, only a portable HDD will suffice. You'll need one that's reasonably priced, performs well and doesn't need pampering and mollicoddling to keep it alive and kicking. The Toshiba Canvio S3600-A is definitely not a drive to go ga-ga over, but it's a simple, reliable and rugged drive with very adequate performance at a reasonable price and that's all you really need from any portable drive. You need this in your arsenal.




12 PlayStation 4

PC gaming is the true heart of gaming and there's nothing that anyone else can say or do that will convince us otherwise. That said, these underpowered consoles do have a place of their own. The one console that you should ever want to own should be the PlayStation 4. It's a true-blue console with none of that "built-for-everyone" nonsense. This is a device that's built for one thing alone, and that's gaming. Everything else is an added bonus. If you really must buy a console there really is no other viable option.



13 TP-LINK TD-W8968

Routers are a confusing proposition for most people. How do you pick the right one? Shouldn't you go with a "faster is better" policy? Agent001 will take care of that query

for you but the TL:DR version is just this: the W8968 is a 300N capable router that's enough for HD streaming to a few devices, comes with two 5dBi antennae that'll give you great range and doesn't break the bank. As long as you're not living in a monster of a house, this should suffice for your needs. 





Dreams

13 Headlines we'd like to read

If you don't agree, and have different choices, send them to editor@thinkdigit.com

1

400,000 rich people robbed and murdered

The spanking new Immortality app that allows your brain to be "uploaded" to cloud servers, costs \$2 million, and allows you to live forever, is driving those who can't afford it to murder. Not a good time to be rich!

Most of the rich people were fingered whilst attempting to buy the app themselves using biometric authentication for payment, and as a result, there were a lot of fingers missing from the crime scenes.

2

No more boring elections, just Like your candidate instead

The Election Commission of India announced recently, "Since almost everyone is on Facebook anyway, the next election will be conducted on Facebook." Prominent Indians' Facebook pages will be monitored, and the Indian with the largest

number of Facebook likes – but with the caveat that they should have a considerable amount of votes from all states – will be invited to form the next government. Sunny Leone is currently in the lead to be our next PM.

3

Nanobots cure a terminally ill AIDS patient, then kill him

Self replicating nanobots were injected into an african HIV+ patient. They replicated a million times and sought out every infected cell and killed all traces of the HIV virus by latching

on and completely pulling apart the cell. However, while celebrating, the patient raised his blood pressure, causing the nanobots to clump together and cause a stroke.

4

Ghar ghar 4G

To thank the Indian public and social army that campaigned on its behalf, the new government has announced free 4G for all! The Prime Minister announced this amidst cheers and whistles outside the Parliament building. Emotional scenes were seen, with many shedding a tear as the dream for proper bandwidth in India was finally being realised.

TRAI later clarified that the definition of 4G was being able to open the Google web site to be able to see the Doodle of the day on your cell phone.

In other news a salt water river has formed on the outskirts of Delhi as the rest of the country literally cried themselves a new river!

World council rules that robots have no rights, and robot-slavery is officially OK

5

Asimov's spirit smiles, Lincoln's does a facepalm. Robot-lovers cry foul, smash their robot friends screaming "kill them instead of letting them live as slaves". China promptly

announces plans to manufacture 100 million robot slaves, prices of robots plummet, and everyone will soon forget the indignation when they realise they never need to work again.

Aliens land in India, ask to meet fourth time PM Modi

6

Apparently the election slogans from 2014 reached Alpha Centauri, because instead of the expected "Take me to your leader", the first words the aliens

spoke were "*Acche din aaneey waaley hain!*" In other news, the US president is a little green man who paces up and down the Whitehouse lawns.

Facebook lets you actually feel Pokes

7

You can now buy a poke device for \$30 that you can attach to your \$2,000 Facebook Tshirt, connect it to the net, and then sit back. You will then feel a sharp pain in the rib area when someone pokes you.

MaZu has clarified that the Facebook Tshirt is not mandatory for the poke device to function, but how else would people know you were poked if just anyone wearing any Tshirt suddenly went "Ow!".

8

Hero of Djakarta assassinated – wakes up an hour later

Dirk Jentlay died in an assassination attempt a few hours ago. He then woke up in the morgue. Scientists scream 'mutant'.

Authorities state that picking up a 500kg car with his bare hands should have been a clue. A new religion is born.

Scandal rocks world's largest religion

9

Reverend deGrasse Tyson, head of the world's largest religion, Science, controversially admitted that not all of the universally taught tenets

are proven facts – even the Big Bang is just a theory. Millions of blind followers stuck their fingers in their ears and went, "La, la, la!"

Samsung launches Ultrasmart phone

10

Samsung recently launched the Ultrasmart phone, which claims to read your mind, tell you when you're wrong, give you driving

directions, career advice, and much, much more. First usage reports from our Test Centre say it's like being married, again!

11

Cannibals claim to be vegan, since humans can now photosynthesize

Now that almost the entire world has been injected with the Breit-Wheeler inspired Photosynthesis gene, anonymous

members of the Lecter club demand cannibalism be considered vegan and legalised.

12

Ultra-real video experience, just press the Red button

EPL CEO, David Moyes, has just given the go ahead for spanking new technology that will allow those of us sitting at home to view the game from a player's point of view. You can switch views in game, and experience the

jerky reality that is football. The EPL strictly disallowed the use of the player cam off the field after the recent scandals involving some players and members of the Kardashian family.

13

Transporter technology to be withdrawn from India – too many flies in our genome soup

Transporter International will remove all transporters from India because DNA and Genome testing shows we've been crossed with flies and mosquitos too often.

106-year old David Hasselhoff to revive Jeff Goldblum's role in the planned movie remake that will be directed by M Knight. He will make a guest appearance as the fly.



Gaming

13 Games every self-respecting gamer should play

Gaming has a short, rich history and one packed with absolutely incredible games. Here are 13 such must-play titles that have changed the way we game

Nikhil Pradhan

With the deluge of blockbuster games packing incredible graphics nowadays, it'd be easy to forget the games that brought the segment to where it's at today. However, if you consider yourself a gamer, it's likely that you've played a few of the games that have achieved the mantle of 'gaming classics'. If you haven't, then make sure that you treat the following as a checklist of games that you have to play.

So, let's get into it, shall we?

1 Deus Ex

Platforms: Windows, Mac OS, PS2, PS3
Release year: 2000

Developed by legendary game designer Warren Spector, Deus Ex takes place in near future America that is racked by government overreach and terrorist attacks and is policed by a reformed United Nations that employs agents augmented with mechanical organs and nanotechnology. You play JC Denton, one of two agents with nanotech augmentations, who finds himself in the middle of a secret war between shadow organizations attempting to control the world.

In terms of gameplay, Deus Ex gives you complete freedom to choose between stealth or all out gunplay peppered with

focus on skills like hacking, demolitions and lock-picking. If you intend to install Deus Ex today, make sure you do so with mods like Shifter, HDTP and New Vision installed.



2 The Half-Life series

Platforms: Windows, OS X, Linux, PS2, PS3, Xbox, Xbox 360
Release Year: 1998 (Half-Life), 2004 (Half-Life 2)

Okay, so the Half-life series may actually be two games (plus two additional expansion episodes), but there's good reason for that. The Half-life games offer a masterclass in how to tell a game story without long, overproduced cinematics. The Half-Life games are also known for their solid gameplay. The first Half-Life game was known for its intelligent AI and thrilling scripted sequences, the second for Ravenholm – one of the most memorable moments in gaming.



3 The Elder Scrolls V: Skyrim

Platforms: Windows, PS3, Xbox 360
Release Year: 2011

The Elder Scrolls games have a habit of completely taking over gamers' lives even months after their launch. Skyrim was no exception and as it turned out, not only was



it the best looking Elder Scrolls game to date, but it was also the most immersive. Skyrim's snowy peaks, fjords and forests populated by warring clans, giants, mammoths and dragons held on to the attention of hundreds of thousands of gamers in 2011 and still continues to do so thanks to a healthy community of modders.

4 Diablo II

Platforms: Windows, Mac OS, OS X
Release Year: 2000

While the first Diablo was arguably a more influential game, Diablo II was definitely the standard – even today, ARPGs are branded a 'Diablo-clone'. Diablo II was a bigger game than its predecessor – it was longer, took place across a wider variety of environments, had a bigger pool of playable characters and a much more fleshed out online suite of gameplay modes. No wonder when Diablo III was launched in 2012, it was unfavourably compared to the 2000 game.



5 Age of Empires II

Platforms: Windows, Mac OS, PS2
Release Year: 1999

Age of Empires II may not be considered a strategy game for purists but it was, nonetheless, the game that made the strategy genre much less intimidating to gamers. And it was in its second installment, based in the Middle Ages, that AOE truly shone thanks to refined mechanics and the presence of a large number of different civilizations, all of whom allowed for different styles of play. Plus, frantic matches with your friends over LAN, unbeatable!



6 Grand Theft Auto: Vice City

Platforms: Windows, PS2, PS3, Xbox, OS X, Android, iOS
Release Year: 2002

It would be so easy to justify Vice City's inclusion in this list by merely pointing towards its soundtrack but we won't do that. Even though it had music from Foreigner, Michael Jackson, INXS, Iron Maiden and Blondie, we won't mention it! Shocking, subversive humour, a sprawling open city and complete freedom to play the game the way you chose was also a draw. It was the base for the refined experiences of San Andreas, GTA IV and GTA V.



7 The Last of Us

Platforms: PS3, PS4 (Remastered edition)
Release Year: 2013

It's always tough for a game released on a single platform to contend for the title of a 'classic' and especially a 'modern classic' but we have no qualms about putting The Last of Us in this list. The reason why it's a must-play game is because of the mature way it tells its story, its naturalistic take on characters and its beautiful and stark environments, all of which were clearly influenced by literary giants such as Stephen King and Cormac McCarthy and movies such as Children of Men and I Am Legend.



8 Forza Motorsport 3

Platforms: Xbox 360
Release Year: 2009

Widely considered to be the best racing game ever released, Forza Motorsport 3 is an obvious choice. Despite not being the best looking game, Forza scores high thanks to a rich career mode, amazingly fun multiplayer and gameplay that could be tuned to suit the needs of both casual gamers and hardcore simulation fans.



9 Resident Evil 4

Platforms: Windows, PS2, PS3, Xbox 360, Wii, GameCube, iOS
Release Year: 2005

Any discussion on survival horror games is incomplete without the mention of Resident Evil 4. When released Resident Evil 4 was praised all around for its character and level design, methodical gameplay that served to heighten tension and scares and an innovative over the shoulder camera that helped gamers see more of the action. Resident Evil 4 was ultimately responsible (along with Silent Hill 2) for a resurgence in action oriented survival horror games.



10 The Legend of Zelda: Ocarina of Time

Platforms: Nintendo 64, Nintendo GameCube, Wii
Release Year: 1998

Ever wondered why The Legend of Zelda series has such a passionate fan following? Well, play the Ocarina of Time and you'll find out. The game has near perfect level design and gameplay mechanics that marries action with RPG elements. Add to that, a great story and a lovable protagonist in Link all of which makes this game a must play for everyone.



11 Metal Gear Solid 4: Guns of the Patriots

Platform: PS3
Release Year: 2008

Fans of movies that offer over the top spectacles will love MGS 4 and they did, with over five million copies sold in a year making it the best selling PS3 title until Gran Turismo 5 broke that record. While maintaining traditional MGS gameplay elements such as stealth, melee combat and gunplay, MGS 4 also tried to emulate battle stress with its Psyche Meter that was affected by temperature and enemy actions, among other things. This is the best game in the Metal Gear series.



12 Super Mario Galaxy 2

Platform: Wii
Release Year: 2010

Super Mario Galaxy 2 is not just one of the greatest games ever released but it's also probably the best platformer ever released. It's also the perfect example of why violence, gore and a story that takes itself way too seriously aren't mandatory to make a great game. SMG 2 pops with colour, fascinating characters and innovative gameplay that requires you to think differently, but the stars of the show are the amazing variety of different planets that you can visit. Even if your gaming diet consists only of Halo, Gears of War and Call of Duty, play Super Mario Galaxy 2.



13 Civilization V

Platforms: Windows, OS X
Release Year: 2010

How do you release a new game in a series that has been alive since 1991 and whose last installment was widely considered to be the best ever? Well, you do whatever Firaxis did when they launched Civilization V. It was another step towards perfection. In fact, we would argue that Civ V is the best game in the series and has been improved by its two expansions. So, go ahead and install Civ V but don't blame us for your inevitable addiction.





Business

13 Tech Startups to Watch Out For

This is the age of entrepreneurship and startups. Anyone who says otherwise has no clue of their potential whatsoever. Here is a list of startups with promising ideas to watch out for.

Jayesh Shinde

1 MartMobi

Brainchild of serial entrepreneurs Satya Krishna Ganni and Pramod Nair – and started through seed capital from IIIT Hyderabad – this startup is attacking the mobile space with renewed vigour, offering anyone an option to build an Android or iOS shopping experience in a few easy steps. By the end of it all, the MartMobi experience guarantees the fact that you'd have a fully functional mobile shopping app (for your goods and services) listed onto the Google Play Store or Apple's App Store. All this without having to type a single line of code. Now, that's pretty impressive.




2 SimpliLearn

While there are plenty of commentators doubting the efficacy of e-learning programs, it hasn't stopped this startup to mushroom into a credible option in the fledgling market. Simplilearn focuses on re-equipping working professionals with IT skills and has trained over 1,00,000 professionals in over 150 countries, according to Anand J Krishna Kumar, its founder and CEO. SimpliLearn has grown over 400 per cent in the past year alone. If you're in the job market missing out on your dream job due to the lack of a particular skill,



SimpliLearn can help you fill that gap in an easy, convenient format

3 uChek

This device from BioSense is trying hard to make reliable diagnostic services affordable and accessible to everyone. The highly sophisticated mobile diagnostic units, called uChek, are powered by the Android OS, and are capable of doing more than 14 parameter testing on urine and blood. These are powering diagnostic labs, doctor's clinics and government centers across India, at a fraction of the cost of existing equipment, but at the same accuracy and reliability levels. 



4 Atomyzer

Don't think it would be an overstatement if we said that our world these days revolves around our smartphones. So what better way than to add more functionality to them and make life even simpler? That's the founding premise of Mumbai resident Rahul Dharod's Atomyzer smartphone case which can spray fluids at you – perfume, hand sanitizer, etc. It's a patent pending design that lets you refill the fluid you want to spray, with all kinds of safety checks measured in, including the fact that it's airline approved. Available only for iPhone 5/5S by October, but maybe this can be the start of a whole new level of convergence trend.



5 InMobi

Probably not a new startup anymore, but InMobi definitely hasn't been spoken about enough. Founded by Naveen Tewari – who's also the company's CEO – InMobi is the world's second data-driven mobile advertising entity, second only to Facebook in terms of unique mobile users per month – which number as much as 759 million! How is it beating companies like Google and Apple at their own game? By concentrating on data and not on advertising, according to Tewari, a 35-year-old IIT Kanpur alumni. What InMobi does is offer a perspective about customers to advertisers, by sifting through data that users constantly generate. And it does that better than some of the best in the business.



6 Nimble

This may seem similar to Fin, but it's extremely different in its usage and target audience. Developed by Intugine, a fledgling Indian startup, Nimble promises to provide you with a gesture-enabled input interface to interact with your PC from anywhere within a radius of 5 metres. From flipping pages, to zooming in on images, to multiplayer motion sensing gaming sessions, this tiny finger-mounted device claims to do all that and more with remarkable accuracy and zero lag – a claim we can't wait to verify. The device will only retail later this year, but you can pre-order it at Rs. 3,500. Not bad for a revolutionary way to interact with your PC, aye?



7 CloudMagic

A lot of us spend too much time tackling our email inboxes, it's irritating and counterproductive. This is where CloudMagic comes in, an email app developed by the company's founder and CEO, Rahul Nadhani. Rather than focus on a zero unread email inbox philosophy, CloudMagic aims to help you find what you're looking for in your inbox, and do that one thing better than anyone else.



And it's being appreciated widely for this effort. The app now adds "cards" functionality which integrates support to publish and share content on Evernote, Pocket, Microsoft One Note, and others, directly through its inbox. It ensures you spend less time in your inbox than ever before.

8 Fin

Wearable tech's all the rage right now, and creating all the buzz right now is a thumb-based gesture-enabled ring. Brainchild of a young Indian startup, Fin tries to mount a ring on your thumb and lets you use your palm as an input device (in conjunction with the thumb and ring, of course). The device pairs up with your smart device, PC or car, letting you do a whole host of claimed tasks and function. What's more, the development team – which successfully got funded on Indiegogo and is on track to deliver devices later this year – lets you assign the segments of your fingers as hot keys for specific actions. Very, very interesting.



9 Housing.com

This is undoubtedly one of the hottest startups in the country right now, trying to provide a one-stop solution for people trying to buy, sell or rent property in India. Founded by a team of ex-IITians who struggled to find apartments during their stay in Mumbai during their graduation period, they identified a crucial consumer pain point and have tried to solve it with flying colours. The startup now has 750 employees based out of 10 Indian cities, and while they aren't as comprehensive as some of the more established players in this space, they are definitely more thorough and rigorous in their listing process, thereby receiving greater commendation from users who visit their fast-growing website.



HOUSING
housing.com

10 EasyBiodata.com

Founded by a team of four (comprising of one Indian who was trying to find a spouse at the time), all studying at Harvard Business School, this startup plans to disrupt the arranged marriage practice in India by giving the power of control and choice back to prospective spouses. It was made as a project to bag the prestigious New Venture Competition award. While it didn't win, it did finish 4th out of 150 startup ideas weighed and measured by top VCs and faculty alike. As the founders finish their MBAs, the website (which doesn't seem too different from other Indian matrimonial sites) is currently profitable, boasting 16,000 registered users and growing 15% week-over-week, despite investing \$0 in marketing. One to watch out!



11 CloudMunch

The process of software development isn't an easy one, where right from writing the code to shipping it to market, there are various stages involved, and precious time is lost if all these stages aren't optimized. CloudMunch does exactly that by putting the entire software development process in the cloud to ensure better coordination and collaboration between different stakeholders. The company was founded in 2011 and has grown at a steady rate, and



analysts are predicting a bright future for this startup since it's operating in a nascent market (PaaS) that's only expected to grow from strength to strength every year.

12 Pugmarks

Latest in the field of online content discovery is Pugmarks, a product of Insieve Technologies, a young Indian startup with three founding members. In the form of an Android app and Chrome browser extension, Pugmarks aims to help you discover new content by observing your content consumption habits on your Android smartphone or PC browser. Contextual awareness is key to cracking this game, as is complex algorithmic running on brute force to crunch all the numbers and give you the data and information you want just when you're about to look for it. As the startup aims to grow, it plans to add at least half a million users in the next six months.



13 Unmetric

Social media's all the rage at the moment, and analyzing user behaviour, consumer sentiment and conversations through social media platforms something that everyone's trying to crack to rake in the big moolah. Unmetric is one such startup that engages in social media benchmarking, by deploying 100 servers on Amazon Cloud analyze the reputation of 15,000 brands across 30 different sectors. It offers three distinct advantages in one package, according to co-founder and CEO, Lakshmanan Narayan – channel intelligence, content intelligence and campaign intelligence. All three metrics are important for brands and customers to analyze. After two rounds of funding, Unmetric hopes to be profitable by mid-2015.

unmetric

ASUS Fonepad™ 7
with Intel Inside™

FONEPAD IS CALLING.

The perfect combination of tablet and smartphone in one package.

Full 3G Phone Functions

Up to 28 hours* of 3G talk time
Faster downloads at 42 Mbps

Supreme Audio

Dual Front Speakers maximize
your entertainment experience

Intel Level Performance

Intel® Atom™ Processor for fast
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IN SEARCH OF INCREDIBLE



ENTERTAINMENT

13 Best Books/Movies/Music that every geek must experience

Being a geek is not just about gadgets, it's also about the culture that geekdom entails. Culture that includes the following:

Mithun Mohandas

1

The Lord of The Rings

Author: J. R. R. Tolkien

Year: 1954

Nothing gets as epic as this work of literary genius. The sheer effort undertaken by one man to create races, languages, maps and more; and then bind them all together to create what we could call as the Lliad and Odyssey of the modern world. One does not simply read just "The Lord of The Rings", reading The Silmarillion and The Hobbit completes the experience. The English speaking world is divided in two: Those who've read the Lord of The Rings and those who haven't.



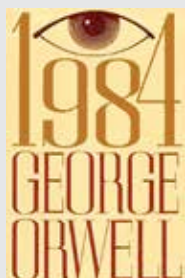
2

1984

Author: George Orwell

Year: 1949

Humans will survive a nuclear war if there ever will be one. What may arise out of the ashes couldn't have been described better than by George Orwell. Set in a dystopian society where man, despite being given the chance to start anew resorts to the same old system that revolves around casteism, propaganda and the 1% having absolute control, this novel is a prime example of how bad things can get if we allow for it. We now describe such a world using the word – Orwellian. Translated into more languages than any English book, this novel is an absolute must read.



3

Neuromancer

Author: William Gibson

Year: 1984

If hacking and AIs do interest you then Neuromancer is something you simply must not skip over. Set in ...well, another dystopian world the novel is centred around a drug-addled low level hustler who once used to be a gifted hacker. Given the opportunity to once again do what he is good at, the central character jumps on board. His objective? To pull off what may be the ultimate hack ever. If you've watched Johnny Mnemonic, Blade Runner and The Matrix, then you could call this book as the culmination of all three even though the book came out before two of the above movies.



4

I, Robot

Author: Isaac Asimov

Year: 1950

One of the most influential writers of his time, Isaac Asimov passed onto humanity what we know as the three basic laws of robotics which are central to ensure co-existence of man and sentient machines. The I, Robot series as well as the novels set around Elijah Baley, R. Daneel and the Spacer universe – introduced a fictional, yet realistic dystopian future. The 2004 movie featuring Will Smith is based on just a fraction of Asimov's series of short stories.



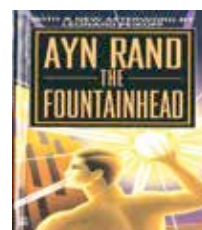
5

The Fountainhead

Author: Ayn Rand

Year: 1943

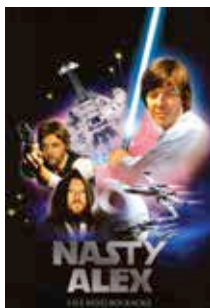
No, this isn't yet another book set in a dystopian world. The Fountainhead is not a book, it's a treatise on how one should lead one's life. It calls out pretenders, fakers, gives you a glimpse into herd mentality and shows you what life is really about. Who the true heroes are and who are the false prophets. The Fountainhead is what birthed the philosophical concept of Objectivism that deals with the development of individualism and the moral purpose of one's life is the pursuit of their own happiness – in short, the philosophy on living on earth.



6 Star Wars

Director: George Lucas
Year: 1977

The Original Trilogy is what we're talking about. This epic space opera has gone on to birth multiple sequels, prequels and between-quals in the form of movies, novels, video games, short stories and TV series. The entire star wars canon is so vast that you can find character history and concept demystification across the hundreds of books written by different authors, all of which are maintained to ensure the integrity of the storyline. And now that a plethora of new Star Wars content is about to be released, one can only wait and see if their beloved series is about to get fleshed out or butchered.



7 Terminator series

Director: James Cameron
Year: 1991

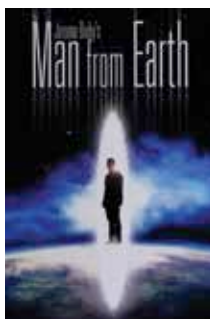
The only reason we've mentioned the entire series is so that you can get the backstory before you watch 'Terminator 2: Judgement Day' – the only one worth watching in the entire series. In the future where a military AI has gone all out nuts on the path to exterminate humanity comes the T-800 played by Arnold Schwarzenegger whose job is to save a pipsqueak. A pipsqueak who goes on to become humanity's only hope in a battle against Skynet. Watch the other movies only for Arnie's sake.



8 The Man from Earth

Director: Richard Schenkman
Year: 2007

This movie is a testament to how a great script can easily make for an equally great movie without the backing of big studios. The entire movie is set in a living room with all the characters involved in a philosophical chase around the history of one of the characters. With plenty of shocking events intertwined around the story of the central character, one watches the movie with rapt attention to guess which other historical/fictional character is about to get assassinated as the story unfolds. This is one intellectual soup that no geek should give a miss.



9 Blade Runner

Director: Ridley Scott
Year: 1982

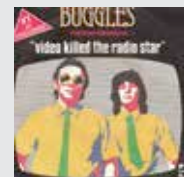
Robots or 'replicants' as they're called in the movie are designed towards performing tasks unfit for humans, the lower working class stuck in menial jobs are slowly replaced with replicants until a sons-of-the-soil movement has them chartered off to remote worlds with limited life-spans. As sentient beings even they desire to be more, more human than human. The movie may have bombed in the box office but the subsequent fan following made it a cult classic and the director couldn't have done a better job by having Harrison Ford play the protagonist - Rick Deckard.



10 Video killed the Radio Star

Artist: Buggles
Link: <http://youtu.be/lwuy4hH03YQ>

The song is an ode to a digital transition, something that we are all too familiar with. Back then it was the big shift from radio to television. Only a self-respecting geek can understand the underlying significance of the sentiment of the song. Also, it made GTA Vice City even better! If you pay attention to the video then you just might spot Hans Zimmer playing the keyboard.



11 Money for Nothing

Artist: Dire Straits
Link: http://youtu.be/wTP2RUD_cLQ

Written from the perspective of a working class man commenting on videos shown on the TV, Money for Nothing went on to win the Grammy for Best Rock Performance. The song is notable for its use of computer generated animation back when the technology was in its infancy. The controversial lines (described as sexist, racist and homophobic) in the songs might have been a bit too much for mainstream audiences back then but it was instrumental in making the listener believe.

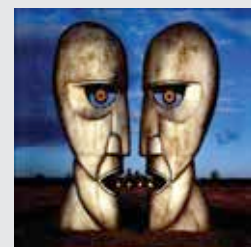


12 High Hopes

Artist: David Gilmour
Link: http://youtu.be/wwht3dDPL_Q


You don't need to be a geek to enjoy Pink Floyd. David Gilmour performing High Hopes at the Royal Albert Hall. The build-up to the crescendo, the lyrics, the Pink Floyd legacy, and Gilmour running out of octaves on his lap steel for the solo. It has to be THE greatest live performance ever. Loop it for at least a year.

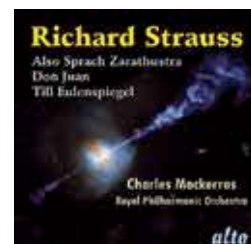
"Steps taken forwards but sleepwalking back again
Dragged by the force of some inner tide."



13 Sunrise - Also Sprach Zarathustra

Artist: Richard Strauss
Link: <http://youtu.be/a32AahqKsrw>

What else could be used to end this list other than this masterpiece. We're pretty sure that most of you wouldn't recognise the artist or the name of the song. This is quite understandable considering that this was written back in 1896 by the German composer - Richard Strauss. You might recognize this song from 2001: A Space Odyssey or even TBBT Season 1, Episode 9. 





GADGETS

13 Gadget Porn concepts to stoke your desire

From the drawing board to your drawing rooms. At least that's the dream for these concept prototypes.

Siddharth Parwatay

1 Emospark

EmoSpark is an Android powered Wi-Fi/ Bluetooth cube that allows users to create and interact with an emotionally concise intelligence through conversation, music, and visual media. So basically it's HAL in real life but hopefully not an evil AI but one that's out to please you in any way it can. Before you get any ideas, the Emospark's operational boundaries extend to it pleasing you by learning your likes, not ummm... pleasures of any other kind. It's a recommendation engine on steroids. Watch the video: <http://dgit.in/emospark>



2 KAWAII Intimate Stimulators

Oh get over it you prudes, we did say gadget porn in the title didn't we? So this shouldn't come as much of a surprise. And there's more to these gadgets than meets the eye. All Kawaii Intimate Stimulators are apparently to be equipped with an 'innovative control chip'. The chip guarantees variety during err performance. Depending on the model, the chip offers either a pre-programmed sequence of motions or vibration modes.



3 SoundBrace

Created by designer Eugene Wang, this concept device aims to take Air Guitaring to the next level. Using a combination of motion-capture and gesture technology (Leap Motion and Myo) this gadget can help you become a virtuoso in no time. Each of the two SoundBraces detect the position of the user's hands and fingers with two cameras. The brace also measures electrical signals generated in the forearm to further determine the different finger gestures. Now musicians and music lovers can actually make beats or practice on the go without carrying an instrument around. Neat ain't it?



4 Atlas

Atlas believes that the so called fitness trackers on the market today are little more than glorified pedometers. Counting steps (which is what most fitness apps do as well) can't possibly be the only metric of measuring your fitness. You wear the Atlas on your wrist and with its 3-axis 3D tracing technology it tracks different exercises, counts your reps and sets and calculates the calories you burned. To put it simply it knows the difference between when you're doing curls, when you're doing pushups or when you're doing a freestyle lap – yes it's waterproof. Some say this is the "true" fitness tracker the world hasn't seen yet.



5 Wankel Moto

This is one concept we really want to see come to life. And soon at that. It tries to reinvent the famous rotary Wankel engine but as a hybrid. The Mirasol display up front shows information and consumes lesser power than an LED display. Aluminium alloy wheels are coated with green rubber to aid the 'AI-magnetised' braking system. Duralumin composite, a high tensile and rapidly cooling composite, is used for the engine. The design's been conceptualised by DSK international school of design and we're calling dibs on the first ride.



6 Multi-touch keyboard and mouse

Fully transparent, multi-touch peripherals have been a long standing sci-fi dream. This concept even utilised open source software for infinite customising. It was put up on Kickstarter way back in 2012, got funded three times over and yet did not succeed. From the project's comments it seems the promoter Jason Giddings went through legal troubles and threw in the towel on this one. Too bad. Hopefully someone else can pick up where he left off and bring this awesome concept to life.



7 The life index watch

A morbid concept on the face of it but one that'll help humanity be more healthy in the long run. Just like in the godawful Justin Timberlake movie "In Time", this Life Index watch monitors the wearer's remaining life time by constantly updating biometric data through skin. The watch monitors information of key health factors such as fitness, stress, nutrition, sleep and environment. Imagine you have a cigarette and poof goes a day and the life index watch shows it to you in real time. If that's not an incentive to quit and generally stay healthy we don't know what is.



8 Audio Phones

The makers of this concept believe that smartphone manufacturers today are concentrating on thinness, lightness, big screens, and high definition, while sound is being neglected. Audio Phones is a surround sound cell phone that tries to incorporate a true 5.1 multi-channel audio system into it. The phone has a power amplification module and six speakers – high pitch, left channel, right channel, left rear, right rear, and subwoofer. Each of the speakers is separated as an individual sound chamber, functioning independently yet in coordination. Not impressed? How about a LED light show? Coloured LED tubes are installed on the PCB that'll respond to the music / audio being played on the phone.



9 Messizon

For those of you who miss the good old days of qwerty phones and think BlackBerry's Q10 just doesn't cut it, this could well be your dream come true.

Qwerty fans know touchscreens don't cut it when typing on the move. The solution? A perfect mixture of e-ink and screen-float technology showcased in the Messizon. Rather than a touch-phone, it is a touchable phone. It offers the typical graphic-based user interface, but also a surface that morphs in three dimensions. Tens of thousands of nanodevices in the front part of the device create an interface that extrudes in response to touch. It has applications not only for the visually impaired but just about anyone!



10 iWatch concept

People have been making their interpretations of the mythical iWatch for quite some time. But this concept by interface designer Todd Hamilton seems to be something that even Apple itself might end up drawing inspiration from. It's based on a slim form factor like the Nike FuelBand and has UI elements that are straight out of the new minimalist iOS 7. The biggest change from other mockups in the wild is the vertical orientation. Watch the video to see the UI in action: <http://vimeo.com/84381995>



11 dataSTICKIES

Say hello to the next big thing in data portability. dataSTICKIES are graphene-based flash drives that aim to replace USB pen drives and hard discs. These stickies as the name implies can be carried around like a stack of sticky-notes. Each of the dataSTICKIES can be simply peeled from the stack and stuck anywhere on the optical data transfer surface (ODTS), which is a panel that can be attached to the front surface of devices like computer screens, televisions, music systems, and so on. Incidentally this is a concept by an indian team.



12 Sign Language Ring

This one's so cool we wonder why no one's made it yet. Sign Language Ring is a set of rings and a bracelet that detects sign language motions and translates them to voice. It also translates voice to text and displays the text on the bracelet. After use, the rings can be set into the bracelet for storage. Imagine the number of hearing impaired individuals it'll be able to help!



13 Lightsaber Knife

This one had us sold at the name itself. C'mon who wouldn't want to slice and dice onions like a Jedi? For this concept gadget, designer Chia-Yu has created a mashup of two sci-fi technologies – the Star Wars Light Saber and the Terminator 2 liquid metal. This knife will essentially change shape to fit whatever use case scenario you need. It can change into five shapes. So go ahead do your chop-



ping in a flash. The handle also has a fingerprint scanner that'll prevent little toddlers around the house from accidentally using it as a toy. 



WE BUILD THE ULTIMATE PC

13 Components needed to build India's fastest PC

When overkill is actually an understatement

Siddhant Sharma



What do you get when you mix the most expensive components the world has to offer and a magazine that's been known to have lost a screw or two here and there? The answer is a PC that's so powerful that it's already computed the question to the answer to life, the universe and everything (we now know what it is, but we won't tell you). This isn't just any PC, it's a PC with the power to hover on a bed of its own exhaust, draws enough power to require an arc reactor and if not adequately cooled, is hot enough to forge steel in. This is the kind of PC that would make Siri forget herself.

We left no stone nor chip unturned to acquire the components for this monster among mortals. It is the ultimate creation, and only our hands are worthy enough to touch it. Muahahaha!

1 Processor:

Intel Core i7 - 4960x:

When you're trying to build the fastest PC, you can't discount the fastest enthusiast grade CPU in the world, the 4960x. After all, you need the fastest CPU for the fastest PC and we would have settled for nothing less. With over 1.86 billion transistors on a die that's merely 257mm, the 4960x packs a big punch and add the words "fully unlocked" to it and you'll find overclocking enthusiasts drooling all over themselves.

The 4960x was the only 6-core, hyper-threaded CPU available that could give us serious results, be it for multi-core video rendering or for other CPU intensive number crunching tasks. Using this Ivy Bridge - E chip also meant that we'll have an updated memory controller which is rated for 1866 MHz natively, as opposed to the 1600 MHz seen earlier. As for future proofing, it provides official compliance with PCI Express 3.0 with 40 whole lanes of PCIe connectivity.

This wonderful piece of silicon is unlocked, presenting a total of 63x multipliers which would let anyone easily push memory data rates past the 2400 MHz mark. This PC is so powerful that it took our rig to the top 100 list in 3DMark's Hall of Fame without even minor over-clocking. Quite a feat.



3 Graphics Cards:

NVIDIA GeForce GTX 780Ti in Quad SLI

Have you heard the saying: "A good graphics card maketh a good gaming system"? Well we have, and it seems we've heard it enough times to change it into: "four good graphics cards maketh an awesome system". More is always better (probably) and in this case we couldn't leave out the best performing single GPU card on the planet and that's why four of these power hungry silicon beasts were chosen, and also because it would be blasphemy to leave a slot empty on the Rampage IV. Together these cards have a total of 11,520 Stream processors and 12GB of Video memory, with the overall transistor count going beyond 24 Billion; boy that's a lot.

Benchmarking these cards was the most wonderful experience ever considering they toppled every other score that we had previously recorded. This was the only time when we saw the 3D Mark Fire Strike FPS in triple digits. We also used a triple monitor setup to run benchmarks at 5760x1080 resolutions at full settings. Tests like Unigine Heaven gave us 115FPS for 1080p and 40FPS for triple monitor tests. Cinebench R15 was another testament to the power of this machine with it getting 110.24 FPS in an OpenGL benchmark run. When the numbers started pouring in like rain in the monsoon, that's the time we realised the sheer luxury of having this much power at our disposal.

2 Motherboard:

ASUS Rampage IV Black Edition

With the responsibility of fitting and managing so many expensive components on its shoulders, we need a motherboard that was exceptional, a board befitting a king. The Rampage IV Black Edition from ASUS was the only one that fit the bill. The board itself is awesome, but the OC panel even better. ASUS took all the standard overclocking options and put them into a separate panel that can be affixed to the front of the panel. This allows for on-the-fly overclocking with no need to enter the BIOS and incorporates features like an OC Key, VGA hotwire and an LN2 switch.

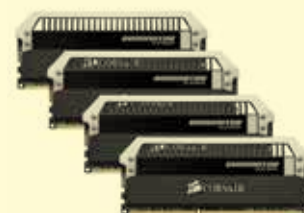
The board is an all-black affair and understated enough for our more refined sensibilities (yes, we consider ourselves to be that refined). Of course, we didn't select this board for its looks, we chose it for its Quad SLI and Crossfire-X support, exceptional power management, support for 8-PWM fans and support for RAMDisks and 2800MHz RAM. Oh, and the audio chipset on this is quite exceptional as well, saving us from the trouble of adding on a separate sound card. This truly is an exceptional board for an exceptional PC.



4 RAM:

Corsair Dominator Platinum 32GB 2133Mhz

32GB? Yes, you read that right, we had to settle for "only" 32GB of RAM. Not out of choice mind you, there wasn't a single 64GB kit available in the country at the time we assembled this rig. Of course, no application really uses that much RAM, but who cares about the real world right? Corsair's Dominator series of memory have developed a great reputation for their performance. Passmark for instance gave a score of 3074 in its Memory Mark tests which is nothing short of breath-taking. In all the time we were using this PC, the maximum RAM ever consumed even under taxing situations was under 7GB. Well that's a lot of memory to spare. But wait! What about a RAMDisk? We have memory to spare right?





5 Power Supply Units:

Antec HCP Platinum 1300 Watts + 1000 Watts

Power is never enough and when you have the most demanding hardware money can buy, you have all the more reason to control more of it. We had to put our heads together and calculate the amount of electricity this build would need and when we finally arrived at the figure in watts, our heads went into a tizzy just thinking about how we were ever going to fire up this monster. A 1200W PSU (the largest available in India) just wouldn't cut it.

Well, we decided that "two's better than one" and went ahead with the build. What? Two PSUs? But how? Daisy-chaining multiple PSUs is not such a big deal. Read up about it if you must. We initially planned to get two of the most powerful PSUs we could get our hands on and solder our own adapter to them, but luckily, our amateurish (at best) soldering skills were not put to the test as we managed to acquire two of Antec's High Current Pro Platinum series PSUs. One churning out 1300W, the other a 1000. How were we lucky? These 80-plus Platinum certified PSUs support a feature called OC-link, essentially doing the job of daisy-chaining the PSUs for us, via a simple cable. The effective power keeping this system purring? 2300W. These are modular supplies too, so there's no cable clutter to worry about.

The hum that we hear when powering on this machine is pure bliss.

6 Keyboard:

Corsair Vengeance K70

Call us what you want but we openly claim that when it comes to using keyboards, mechanical keyboards pwn membrane keyboards and bury them in a deep grave. The feedback ON mechanical keyboards is unrivalled by anything except other mechanical keyboards. Cherry MX is known for their amazing mechanical key switches and the K70 uses their Red key switch flavour. We've come to love Cherry MX Red keys because of their responsiveness and since the K70 is primed for FPS gamers it has always been our choice for one of the best mechanical gaming keyboards available.

With a uniform red backlight, key-by-key backlighting option and brushed aluminium finishing, the K70 fit is the perfect fit for this system.



7 Mouse:

Razer Ouroboros

Borrowing a phrase from Casino Royale, and butchering it a bit, "There are mice and there are *mice*. This is the latter". The Razer Ouroboros is no ordinary mouse. It's an extension of your arm, an extension of your will. It's perfectly balanced, melds into your hands and responds to your every command. The mouse is presented to you in a manner befitting its very existence— in a black, foam-lined case. The mouse itself has been designed and built with the utmost care and attention to detail and everything from the magnetic latches to the switches have been carefully chosen for optimum performance. Razer has outdone themselves with the Ouroboros and we couldn't be more pleased. If ever there was a mouse to grace the ultimate PC, this is it.



8 Headphones:

Sennheiser G4ME Zero

A good gaming PC needs a good gaming headset, a great one needs a great headset. The G4ME Zero from Sennheiser is one such candidate. It's an exceptionally well-built set with Sennheiser's trademark styling. The sound signature has been optimised for gaming and it shows, or rather, it's audible. This is by no means an audiophile grade set, neither is it one that you'll want to use for watching movies or listening to music; this is a set with only one objective in mind and that is gaming. It's a wired set, but the cables are very long and the mic bears special mention for its quality and performance. We have encountered a couple of sets that might improve on this in some areas, but as a single package, nothing beats the G4ME Zero.



9 Monitor:

BenQ BL3200PT 32"

The ultimate PC needs the ultimate display and the BenQ BL3200PT serves us just fine in that regard. A gorgeous 32" VA panel pumps out a resolution of 2560x1440 with 100% sRGB support. We would have loved to pair a 4K monitor with our monster of a rig, but ill luck let us down. The only 4K monitor in the country that was available to us developed some sort of problem and failed. Regardless, the BL3200 is by no means a poor substitute. It's literally the very best monitor we've ever tested and while VA panels do, natively, sport low refresh rates, the visual fidelity of the monitor more than makes up for it.

Given the four GPUs we stuffed into this system, pushing pixels was obviously not going to be an issue here. Games and movies seem to provide an entirely different experience on this monitor, a by-product of the immersive nature of a 32" screen at 3 feet, and the 2K resolution.





10 CPU Cooler:

NZXT Kraken X60

It won't ever be acceptable to use anything other than liquid cooling to cool the Intel Core i7 4960X on our Ultimate PC and so we unleashed the Kraken on its arse, which makes sense owing to the fact that we had to cool a CPU that had a TDP of over 130 Watts. With a 280mm radiator, the Kraken x60 sat right inside the top mounting area of the case. A total of four silent fans were selected and mounted in a push-pull configuration to carry the hot air from the radiator. When we finally had our system up and running, we recorded an overall CPU idle temperature of 21°C at an ambient room temperature of 20°C which was nothing short of astounding for an all-in-one liquid cooler. The Kraken still held itself well when we stress-tested the CPU by running loops of Prime95 torture test and the 4960X hardly crossed a maximum load temperature of 52°C. Using the Kraken X60 meant that we could still have some headroom for future overclocking endeavours. Which you'll read about very soon. Online.

11 SSDs:

SanDisk Extreme II 240GB x 4

When someone drops four high-performance SSDs into your lap to do what you want with, you nonchalantly flip them aside and continue to play WoT. Once that person leaves however, you drop everything and slap them into the Ultimate Rig and set 'em all up in RAID 0 with all the excitement and energy of a kid discovering Half-Life 3 under his pillow in the morning. Owing to the limitations of the board, we had to set two on SATA3 and the other two on SATA2, but it couldn't be helped. These drives also served as our primary storage because, well, why the hell not? The Extreme II uses Marvell's - Monet 88SS9187 controller with 256MB DDR3-1600 DRAM onboard. We saw the SanDisk Extreme II RAID 0 SATA3 pair getting read and write sequential data transfer speeds of 907.46 MB/s and 822.70 MB/s respectively.



12 Case:

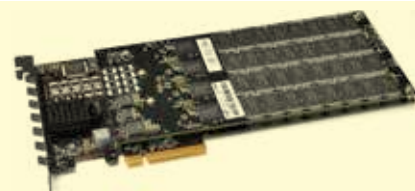
Corsair Obsidian 900D

An epic PC without an epic case is just a sad PC. The epic case for the Ultimate PC had to be the Obsidian 900D. A bottomless pit of a case, this one just swallows components whole and never spits them back out. We spent a night camped inside as we sat and assembled the components, setting up a hammock between the hard-drive bay and the back panel. With a case this large, assembly and cable management was never going to be an issue and it wasn't. If anything, some of the cables turned out to be too short to circumnavigate the girth of this case.

The 900D is capable of accommodating a 480mm radiator at the top, another at the bottom, a 240mm radiator at the side

and bottom again, a 140mm radiator at the rear and a 360mm radiator on the front. Whew! We can breathe again. We only needed a 280mm radiator however, and we mounted that on the top. The 900D can, of course, accommodate two PSUs, which was ideal. There was so much space left in the case even after we finished assembling the rig that it actually seemed empty, which is saying something. And yes, we put in 13 fans, which incidentally (but definitely not intentionally) is a nod to the 13 years that Digit's been alive and kicking. Could we have gone with another case? Yes. Would we? No.

The amount of room this case offered to play around was simply staggering. We would have loved to permanently setup residence in that case, but it was, unfortunately, too drafty for health. Too bad. We could have had so much fun.



13 PCIe SSD:

OCZ Z-Drive R4 CM88 1.6TB

After being blown away by the benchmark scores that we were seeing with this build, we decided that we weren't blown away enough and that an OCZ Z-Drive R4 that costs as much as a mid-size sedan was a more sensible option.

There are few instances in a mortal's life when one sees something as powerful as the OCZ Z-Drive R4. Think of this drive as the Pagani Zonda of the computer world, which is also proportionately as expensive and as powerful as a high-end PC in itself. It costs just under ₹9,90,000 and no, it isn't diamond studded or gold plated but is in fact, coated with something more precious, 8 x SF-2282 (SandForce) controllers and it also uses two PCBs to accommodate all those controllers. With so many controllers available, the drive has a total of 128 Intel 25nm MLC NAND devices on it. Since we don't want to bore you with more specifications, take a brief look at its performance. We assure you that you'll never see such scores again. Not for a long time yet.

Exhibit A: Crystal Disk Mark OxFill

Sequential Read speed: 1252 MB/s;

Sequential Write Speed: 1731 MB/s.

Exhibit B: AS SSD overall benchmark score: 3530; Sequential Read speed: 2419.69 MB/s with an access time of 0.063 ms; Sequential Write speed of 1847.16 MB/s with an access time of 0.161 ms.

The results were synonymous with real world tests too. We recorded read and write speeds of 962 MB/s and 1410 MB/s respectively for a sequential file transfer of 8GB (that's 8 seconds for an 8GB file by the way). Assorted file read speeds were also equally crazy. We didn't have any relative performance numbers to quantify the result because we never tested something this fast. This is what happens when you pair an enterprise grade component with a consumer grade ultra high-end PC.

On a more practical note, you really don't need this SSD for any possible home usage scenario. But who cares? This is the Ultimate PC and it needs the ultimate components. Nothing more, nothing less.

Note:

We actually made multiple builds of the Ultimate PC as we could only run a maximum of four full sized PCIe cards on the Rampage IV Black Edition. We used the OCZ Z-Drive R4 CM88 along with a tri-SLI GTX 780Ti setup for one build and 4 x SanDisk Extreme II along with a quad-SLI 780Ti setup for another.

13

Potential Roadblocks while building India's fastest PC.

Even sports cars hit a few roadblocks now and then.

Siddhant Sharma

Bringing all parts required and putting them together in a build of this magnitude is not as simple as saying: "Yay! Let's build the fastest PC we can." It's always easier said than done because there are too many factors that are beyond your control.

Just sourcing the components was a pain, some of which took over six months to acquire. Factoring in the limited availability of the niche components we require, actually having them arrive in our labs at the same time was a herculean feat.

Our product coordinator was run off her feet and Big Daddy developed a few grey hairs in the process. In the end though, it was all worth it.

1 Money

The most important thing that you need to build an Ultimate PC like this is, well,... *Drumroll*.... Money, and lots of it. You can't build a PC like this even if you have a few pots of gold with you because what is required is at least a medium sized treasure chest. Money makes the world go round and when we saw the total amount of money the parts in this build cost, half of us nearly fainted. They said "Money can't buy happiness", but once we built the Ultimate PC, we figured they were all wrong. The Price vs. Performance ratio of this build is skewed beyond imagination considering you can easily get away with building six of our "ultra-high end" rigs (we should really change that name now) from our killer rigs section.

2 Pairing two PSUs

Ed: "Hey Joe, we don't think a single 1200 Watts 80-plus Platinum certified PSU would be enough, we would at least need two of those suckers."

Joe gasps in horror, drops everything in his hands and runs like the wind.

Ed: "Well that's another intern we lost this week because of this darned Ultimate PC. I won't be able to find more minions to help build this beast of a machine in time because everyone is afraid it'll blow up."

The above is an excerpt from Chapter 10: "Building the Ultimate PC" of our imaginary book titled: "Life at the Digit Test Centre". This kind of situation arises when you're putting four GTX 780 Ti's in Quad SLI on an already power hungry machine. Unless you have an easy solution to this problem in the form of two OC Link-enabled Antec HCP PSUs, you'll have to make do with building your own 24-pin adapter, which is not a task for the meek. Especially when you have ₹16,00,000 depending on your soldering skills.

3 Space constraints:

Realty prices are skyrocketing and the desire to satisfy your need for more space is a tough pill to swallow. Similarly, when you have a boatload of components to build the Ultimate PC, you'll run out of space for your components. The problem is not only with fitting multiple GPUs in the system, it's also for finding the right parts that don't encroach on more space than they need and provide more clearance. Air coolers (big ones) have been known to do that, especially making RAM installation near the CPU area almost impossible or obstructing the side-panel of a case with their height. Another factor that needs addressing is liquid cooling, will there be enough space to mount the kind of radiator you're looking at? Radiators come in plenty of different sizes and you have to be sure which one will fit and where.

4 SATA 6Gb/s limitations on the X79 chipset:

Though Intel's X79 chipset is currently the most powerful consumer chipset on the market, it has a few silly shortcomings mostly in the form of availability of Intel's native SATA 6Gb/s ports. It houses I/O functionality in the form of only two native Intel SATA 6Gb/s ports and if a user wants more such ports, he's forced to use the ASMedia based SATA 3 ports. Intel's controller has direct access to the chipset and is a faster and more stable option as far as transfer rates go, which isn't the case with third-party ASMedia controllers. This is why we used the two Intel SATA 6 Gb/s ports for RAID 0 on our SanDisk Extreme II and the other two Intel SATA 3 Gb/s ports for RAID 0 on the remaining two SanDisk SSDs.

5 Bottleneck at the CPU end in Quad SLI

When we said earlier that the Intel Core i7 4960X Extreme Edition can address a maximum of 40 PCI Express 3.0 lanes, we were being less than honest. The reason for this is that since we wanted to use Quad-SLI, the number of lanes per card would decrease and the CPU could only address the four 780 Ti's in a x16/x8/x8/x8 configuration which seriously begs the question as to why Intel didn't address this with their X79 chipset. Hopefully, they'll improve with their upcoming X99 platform.

6 Where's the good stuff?:

Even though we tried to avoid talking about this, we have to because when you want to build the fastest PC, you'll want to get your hands on some rare parts. They're easily available overseas, but are very hard to find here.

7 6. Power trouble

When you're building something that eats so much power, you're bound to meet this roadblock. As it happens, our Ultimate PC runs on two PSUs with a combined wattage of a whopping 2300 Watts, the likes of which we've never witnessed before and will probably never need. But with so much electricity needed by the PC, we had to make sure we ran it on a separate circuit breaker altogether. One of our spike strips sacrificed itself when we connected both the PSU power cables to it and so we had to use two separate spike strips for the job. Now that's what happens when you play with more power than you can possibly handle.

8 A case of fat GPUs and shortage of PCIe ports

Call it first world problems or something else but when you have four full sized, dual slot GPUs, they take up almost all the space you can find on the motherboard and this was also the case with our Rampage IV Black Edition. With each card occupying two slots, we filled up all the four PCIe x16 slots with the GPUs and didn't have space left for anything else. This is precisely why we thought to make two builds with the same PC. One with the OCZ Z-Drive R4 PCIe SSD installed next to three GTX 780 Ti's in SLI and the other build with four GTX 780 Ti's in SLI excluding the OCZ drive from the build and using the SanDisk Extreme II SSDs for storage. Remember to measure everything before purchasing your components.

9 Unavailability of games

This can't be true right? Yes it can! We're talking about the unavailability of games that make full use of the hardware installed in the Ultimate PC. Though games are becoming increasingly realistic, most of them that are released these days are console ports. The problem with this is that even though these games might be good, they aren't developed with the point of view of making full use of a PC's resources. Many games still make use of only a single CPU core as opposed to making use of all the cores available. Something that the developers should improve upon.

10 Special drivers needed:

A special SSD calls for special drivers and the king of all drives - the OCZ Z-Drive R4 needed that too. It's not everyday that you use an enterprise-grade PCI Express SSD and in order for it to work we had to make sure that we installed separate drivers for this drive during the Windows 7 installation process itself. Since the OCZ drive is primarily built for servers, once you power on the system, the drive has its own separate POST process which increases the boot-up time of the PC.

11 Cable Management

Cables, Cables, Cables. A legion of cables. This is something you'll come across when you have to connect a bountiful of components and that too while using two PSUs. We used fully modular PSUs but that doesn't mean we had less cables to take care of. In fact, when we come to think of it, the maximum time we took during the entire build process was for cable management. Cable Management in a rig of this scale is very vital as you're not only worried about airflow but also about the overall looks. After spending hours in tying and tucking cables out of the way, we're rewarded with a PC that looks professionally assembled and spiffy.

12 Thermal problems

Since the Ultimate PC was chock full of awesome hardware, we had to make sure we prepared for several thermal issues that might arise later on. The installation of two PSUs meant that we had to find a way to provide airflow to both of them. The only solution to this was to face both the PSU fan sides opposite to each other and facing towards the sides of the case. This allowed for fresh air to be blown inside the PSU directly from the sides of the Corsair 900D. The next thermal mountain we had to climb was for the graphics cards because a quad SLI setup is like a heat sandwich in a PC. We had to install two additional 120mm fans on the drive cages to push cool air into the GPUs as we didn't want them to run hot while starving for air..

13 Miscellaneous

You need to always make sure that you reset the BIOS before you start a PC like this especially since the OC Panel that gets connected to the ASUS Rampage IV BE motherboard may have an OC profile activated, a lesson we learned the hard way (there was smoke). It's also vital to test all the components before hand, especially the PSUs. You don't want to lose a component worth upwards of 50k simply because you forgot to test some simple cable. Double check the connectors that you're using too and make sure that they're connected securely and in the correct slots. This will prevent you from accidentally blowing something up.


Complete Build Specifications:

Component	Brand and Model	Price (in ₹)
Processor	Intel Core i7 4960x Extreme Edition	78,000
Motherboard	ASUS Rampage IV Black Edition	35,200
RAM	Corsair Dominator Platinum 32GB 2133Mhz (CMD32GX3M4A2133C9)	38,999
Graphics Card	3x NVIDIA GeForce GTX 780Ti (Tri SLI)	1,80,000
Case	Corsair Obsidian 900D	28,999
Power Supply	Antec HCP Platinum 1300 Watts + 1000 Watts	47,000
CPU Cooler	NZXT Kraken X60	8,273
SSD	OCZ Z-Drive R4 CM88 1.8TB PCIe	9,90,000
SSD	SanDisk Extreme II 240GB x4	1,12,200
Monitor	Benq BL3200PT	75,000
Keyboard	Corsair Vengeance K70	9,999
Mouse	Razer Ouroboros	10,790
Headphones	Sennheiser G4ME Zero	25,000
Fans	3x120mm Cooler Master Sickle Flow X Red LED/ 2x120mm Corsair SP120L / 2x140mm Corsair	5,700
Lights	NZXT Sleeved LED Kit 200cm (Red) + Sunbeamtech Focus LEDs	1,148
Grand Total:		16,46,308

Alternate components used:

Component	Brand and Model	Price (in ₹)
RAM	Kingston Hyper X Predator 1866 MHz (KHX18C10T2K2/16X) x 2 kits	16,000
Graphics Card	1xGalaxy GTX 780 Ti HOF (added to existing 3x NVIDIA GTX 780 Ti)	60,000
PSU	Corsair AX1200i	26,000
Monitor	ASUS PB278	41,200

Conclusion:

Remember what we said about overkill being an understatement? Well, this PC's performance is simply staggering and completely unnecessary at the same time. Its performance figures are through the roof, but there's little real world application for it. It's testament to the system's power that we cracked the 3DMark's top 100 list simply by existing. What will happen once we actually overclock the system is something we don't yet know, but we're really excited to find out. Keep an eye on our website and facebook page to track our progress. For now, you can go to dgit.in/UlimatePC for more high-res pics of this monster in action. 

Windows shootout: Top Windows 8.1 tablets tested

With iOS' and Android's stranglehold on the tablet market, how does a new entrant make a mark?



IMAGING: BATJU NV

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When we talk about tablets the first thing that comes to our mind is the iPad and then maybe the Nexus 7. However, things are slowly changing as

we are starting to see Windows 8/8.1 running tablets starting to sprout in the market. After Windows 7, the new update to the OS saw a new app ecosystem on top of the familiar desktop layout. Windows 8 also brought in some touch gestures which help you navigate and operate the OS. The good part is that one can

get a full-fledged desktop/laptop experience as you get the tile based UI along with the desktop mode. However, the shortcoming is that using the touchscreen on the desktop mode is a real pain as things seem microscopic.

A lot of people have criticised Microsoft for doing a horrible job with the new OS (we agree

to some extent) but it should be noted that Windows 8 is not only faster, but is much more efficient on portable devices, including laptops and tablets. Since the PC market is being shaken up, Microsoft has to really push harder to get a fair share of the tablet market and compete against iOS and

Android and the multitude of devices and services.

Since the market still lacks Windows running tablets we have chosen three popular tablets, one each from Dell, Acer and HP for a quick comparison. While Dell and Acer offer 8-inch tablets with same processors, the HP tablet has a larger 10.1 inch display with a slightly faster processor.

THE TESTING

Since the market doesn't offer a lot of Windows tablets, we have taken into account the three most popular tablets available on various online portals. All three tablets fall in the ₹20-30k price segment and run on Intel based processors.

For the testing we have taken into consideration the design, specifications and of course performance. The performance tests include synthetic benchmarks, where we install and run some benchmarking tools like CineBench, 3DMark, GFXBench and compare the scores. These benchmark tests give us performance values for every tablet, which further helps us to determine which tablet has the most potential to provide the best performance. A higher score means the better the tablet is supposed to perform when used for productivity, multitasking or graphics intensive tasks. Synthetic benchmarks don't present

the complete picture however, so we look at other factors such as design and specifications as well. We take a look at the build quality, material used, portability, thickness and the overall experience of using each tablet. Having a sturdy body and design is a key ingredient in making a desirable gadget and the same goes for tablets. We also put the specifications of each tablet head-to-head and check which one offers the best list of features.

In the end we score the tablets in three sections, performance, specifications and design. These scores are then weighted and added up, resulting in a "Total Score". The one with the highest score wins!

BODY AND DESIGN

Dell has always been a pioneer in the computing world and with the Venue 8 Pro it does prove one thing, it isn't shy when it comes to tablets. The Venue 8 Pro, as the name suggests, has an 8-inch display offering a 1280x800 pixel resolution. Now having an 8-inch display means that when you're using the desktop mode it can become your worst nightmare. When using a laptop or desktop, we have a mouse which is much easier to use, but when you are swiping or tapping with your fingers, things get a little tricky. Icons and fonts go really small, which makes it difficult to open folders and software appli-

PANASONIC TOUGHPAD FZ-M1

We also got our hands on one of the most high-end Windows 8.1 running tablet. The rugged and tough Panasonic Toughpad FZ-M1 is probably one of the most expensive Windows tablets as it runs a 64-bit version of Windows 8.1 Pro and is powered by a 4th Generation Intel Core i5 vPro Processor (1.6GHz with Intel Turbo Boost up to 2.3GHz) along with 8GB of RAM and an option of a 128GB or 256GB SSD.

The memory can be further expanded thanks to a microSD card slot. There is also a full sized USB 3.0 port, a microSIM card slot, a 7-inch 1280x800 display with an anti-glare protection guard, an 8MP rear camera, and a bridge battery which enables hot-swap battery replacement. The tablet comes with a 5-foot drop and all-weather, IP65 dust and water resistant design and is one of the toughest tablets available in the market today. The tablet also has tough rubber protection all around the tablet which protects it from drops and shocks.

Prices start at about ₹1,30,000, which is a considerable amount for a tablet, but with such high-end specifications they tablet is well worth the money.



Specs of the Toughpad FZ-M1

- **Operating System:** Windows 8.1 Pro (64-bit)
- **Display:** 7 inch IPS with 1280x800 pixel resolution
- **Processor:** Intel Core i5-4302Y vPro Processor 1.6GHz with Intel Turbo Boost up to 2.3GHz
- **Memory:** 128GB/256GB SSD storage, 8GB RAM
- **Camera:** 8MP rear with LED flash, front webcam
- **Battery:** 3220mAh
- **Connectivity:** Wi-Fi, Bluetooth, 3G, USB 3.0

ASUS
IN SEARCH OF INCREDIBLE

ASUS Transformer Book T100

2-IN-1 ultraportable laptop with detachable tablet

Powerful mobility

Smart productivity

Long battery life



ASUS recommends Windows 8.



Intel Burst vs. Turbo Boost

Intel's myriad architectural changes and nomenclature might be confusing. Here's a quick refresher: <http://dgit.in/1gu5oXs>



The life of a genius

Also known as the heart and soul of the Apple Store, here's a look at the life of an Apple Store Genius <http://dgit.in/1n1TgbK>



Dell Venue 8 Pro

cations. Nonetheless, the tablet has an appealing design with nice, metal hardware buttons on the edges. The back is rubberized with a textured finish which offers good grip. The placement of the Windows Start key is a bit annoying as it is placed right on one corner, making it difficult to reach. This leaves you only using the on screen Start button.

The Acer Iconia W4 is a standard looking tablet with the front display covered with glass surrounded by a silver bezel which curves out at the bottom and houses the Windows Start hardware key. The tablet is a bit bulky at 10mm, but with an 8-inch display, it isn't all that huge. The back can easily be presumed to have a metal finish though in reality it is all plastic back with a metal like paint finish. It gives it a nice touch and lends it a more premium air. There is also a 5MP primary camera and a secondary 2MP camera which offers full HD recording capabilities which is great for making video calls. The W4 comes with an 8-inch IPS display with a resolution

of 1280x800 pixels. It is bright and vibrant and viewing angles too are pretty good. The only issues again, as we saw on the Dell Venue 8 Pro, is the tiny little screen and the fact that the Windows 8 desktop is a pain to use. Apart from the standard OTG enabled microUSB port, the tablet also has a micro HDMI port which is useful if you want to attach an external display.

The biggest tablet of the lot is HP's Omni 10 with a 10.1-inch display offering a cracking resolution of 1920x1200. It makes sense to have such a high resolution on a 10.1-inch display as it improves the pixel density and thus, the sharpness. The display is far superior to the ones discussed above but offers almost similar brightness and contrast levels. The overall design of the Omni 10 is quite good, with the back panel having a matte plastic finish. There is a capacitive Start button, which is quite convenient when switching between the tile and desktop modes. The tablet also has an 8MP rear and 2MP front camera, which takes average quality pictures, but are useful when making video calls. Like the Acer tablet, the Omni 10 also has a micro HDMI port to

expand or mirror your display onto external devices. The only concern with the design was the proprietary charging port and the fact that you can't charge the device via the micro-USB port. You'd think manufacturers would have caught on by now.

All three tablets support external keyboards and mice, which can be connected via Bluetooth or the microUSB port. This makes it much easier to operate the tablet if you really need to type a lot, but that's not really what these devices are for in the first place.

HARDWARE AND PERFORMANCE

Having a powerful hardware package is crucial as almost every vendor is bringing out exceptionally fast devices at a lower price range. All the three tablets are powered by Intel based processors which also means that they offer decent battery life.

The Acer Iconia W4 runs on an Intel Atom processor Z3740 quad-core processor clocked at 1.33GHz which can go upto 1.86GHz thanks to the Intel's Burst technology. There is 2GB of RAM, 64GB of internal memory and also a microSD card slot to further expand the storage. The graphics are backed up by Intel's HD Graphics chip.

In the connectivity department you get Wi-Fi, Bluetooth, GPS and also 3G via the microSIM card slot. There is also a non-3G version of the tablet which is available at a much lower price. To provide the power, the Iconia W4 is equipped with a 4960mAh battery



Acer Iconia W4

pack. The 8-inch display on the tablet offers an 1280x800, which seems decent and doesn't look too shabby.

The Dell Venue 8 Pro runs on a similar Intel Atom processor Z3740D quad-core processor as on the Acer tablet which has a clock speed of 1.33GHz with Intel Burst speed of 1.86GHz coupled with 2GB of RAM and Intel HD Graphics. There is 32GB of internal storage which you can expand using a microSD card. The 8-inch display comes with the 1280x800 resolution offering a similar experience as the Iconia W4. The battery pack on the Venue 8 Pro has a rating of 4830mAh which is slightly less than the Iconia W4, but surprisingly it performed better in our battery tests.

The 10.1-inch, the HP Omni 10 has the best hardware among the three, sporting a faster, Intel Atom Z3770 quad-core processor with a base speed of 1.4GHz and a burst speed of 2.4GHz. There is 2GB of RAM and 32GB of internal storage which can be expanded via a microSD card. The resolution on the 10.1-inch display is 1920x1200 which



HP Omni 10



Evolution of intelligence

How and when did intelligence first evolve? This article might have the answer <http://dgit.in/lj08Mft>

\$160,000 to park your car

Parking space in a big city is not cheap, but Beijing has taken it to the next level with prices hovering around \$160,000 <http://dgit.in/lj08Mft>

Windows 8.1 tablets

offers better pixel density and a crisp display. The larger display also means a lot of battery usage and to counter this, HP has generously thrown in a 6200mAh battery. Very considerate.

For the performance category, we carried out some benchmark tests where the Acer and Dell tablets were neck to neck. The HP Omni, due to its superior processor managed to lead the performance test. In the battery test, the Dell Venue 8 Pro was a tad better than the HP Omni 10 as it suffered a loss of just 7% after playing a full HD video for 1 hour, while the HP tablet lost 10%.

Just for some gaming kicks, we played Asphalt 8: Airborne on all the tablets, which is available as an app on the Microsoft App store. All the tablets were capable of running the game and we didn't see any lag or stuttering of any sort.


WINNER

The Acer Iconia W4 and the Dell Venue 8 Pro offer similar dimensions and an almost identical hardware and performance package. But an 8-inch display doesn't seem impractical for running desktop mode on Windows 8.1.

The HP Omni 10 not only offers faster hardware and better performance, the bigger 10.1 inch display means more real estate. This is crucial and makes the experience much better than the smaller 8-inch tablets. For these reasons, we think that it is quite practical to put your money on the HP Omni 10.

MICROSOFT SURFACE

Microsoft's surface line-up is the missing link here. The devices are yet to launch in India and we wish they were available. They are said to offer the most

			
	Dell Venue 8 Pro	Acer Iconia W4	HP Omni 10
Price	25,430	29,990	29,990
Performance (of 40)	23.957022807	22.1352526316	25.5855736842
Specs (of 30)	20.4	24.6	26.7
Build and Design (of 30)	23.4	22.5	24
Overall (of 100)	67.757022807	69.2352526316	76.2855736842
Rear camera	5MP	5MP	8MP
Front camera	1.2MP	2MP	2MP
CPU speed	1.8GHz	1.3GHz	1.46GHz
CPU cores	4	4	4
MicroSD card expansion	Y	Y	Y
RAM	2GB	2GB	2GB
Display	8 inch	8 inch	10.1-inch
Display resolution	1280x800 pixels	1280x800 pixels	1920x1200 pixels
Display PPI	189	189	224
Battery capacity	4830mAh	4960mAh	6200mAh
Weight	394gms	430gms	635gms
SIM slot	N	N	Y
Built-in Storage	32GB	32GB	32GB
HDMI Port	N	Y	Y
Performance			
Battery after 1 hour of video	93%	86%	90%
GFXBench 2.7 T-rex Offscreen	884	808	575
GFXBench 2.7 T-rex Onscreen	1194	1199	757
GFXBench 2.5 Egypt Offscreen	4443	3658	4421
GFXBench 2.5 Egypt Onscreen	4020	4016	2941
3DMark Ice Storm Unlimited	15459	14046	13029
Cinebench 11.5 CPU	0.93	1.22	1.46

compelling Tablet experience on the Windows platform yet.


The Surface Pro 3 could be a game-changer here. It's a massive device, by tablet standards, since it sports a 12" screen. Microsoft hasn't scrimped on anything when they made the device as it's packed to the brim with the best hardware that money can buy. It's supposed to be powered by an i7 CPU, plenty of RAM, an SSD and sports a display with a resolution of 2160x1440.

There are improvements in the weight and thickness

department too, with the device weighing in at a meagre 0.800kg and a thickness of just 9.1mm. In a device with a 12" screen, this is simply astonishing. The device itself is positioning itself in a very interesting spot, one that's akin to the so-called "phablets."

The Surface Pro 3 is supposed to be a sort of hybrid laptop/tablet. One that's simultaneously taking on the iPad Air and MacBook Air. We can't comment on whether it'll succeed or not, but it's definitely an interesting device and we, as we're sure you are too, are

very curious as to how things will pan out in the end.

It differs from most tablets in that it's a laptop in a tablet form-factor and maybe this is a sign of the changing times. Will we see the death of the laptop anytime soon? Probably not. But we're certain to see a transitory period in the coming years, especially if rumours of Apple's ARM based Macbooks pan out. It's an exciting time for us, as geeks and consumers and we await the future with a fervent anticipation. It's an exciting time ahead for sure. 



Reinvent the internet?

The National Science Foundation has sponsored a \$15 mn award for anyone who fixes the Internet <http://dgit.in/1ib6pPs>



Doomed: Mobile wallets

There are several reasons why mobile wallets haven't caught on. Here's why the concept will always struggle. <http://dgit.in/1gpcwUZ>



Project the right image

Supersize your cinema entertainment quotient by investing in a home theatre projector. We simplify the choice by recommending you the right ones for the job.

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We are so spoilt by commercials and store-sized promos of television sets that we tend to revolve our entertainment requirements around a really expensive HDTV. We seldom give projectors any thought while trying to zero in on the centrepiece of our home entertainment system. Perhaps the deep-seated notion that projectors are expensive and mostly for commercial use is an added deterrent, and TVs are something we all grew up with, so they are much more familiar and safer bets, in that sense.

While having a projector setup in a household isn't the same as installing a large screen high-definition LCD TV – for instance, adequate space is an issue and how effectively can one close the blinds and be in a near-dark room in broad daylight? – There are some clear advantages the former enjoys over the latter.

With a projector, any room can be a movie room – be it the living room or guest room, and the resulting image it throws can be bigger, better and larger than your HDTV. Given the right conditions, there's no reason to not buy a projector.

In the pages that follow, we talk about nine projectors from brands like BenQ, Epson,

LG, and Ricoh ranging from ₹60,000 to ₹1,50,000, and they came in various shapes and sizes. We are attempting to pit them against each other, weigh their pros and cons and help you decide where they stand in terms of their features, design and performance so you're empowered to make an informed buying decision after reading this article.

Below ₹1 Lakh BenQ W750

This projector doesn't come with a zipped bag, which is almost a norm, but not a requirement. Accompaniments include a software disc, remote controller, VGA cable, power cord, and an instruc-

tion booklet to get you started. Retrieving the projector from the box is easy, but after you connect it you realize the fact that it has a native resolution of 1280x720 pixels. Like the previous projector, we had to bring the W750 close to the screen since its ideal throw distance is between 1 and 2 metres from the screen. After adjusting the zoom and focus, we were left to marvel at a crisp, clear and bright image on the projector screen.

After recovering from the initial shock of this being a 720p projector only, we very quickly realized that the W750 wasn't so different from any of the other BenQ projectors we'd gone through, highlighting



Google Classroom

Google has started previewing its latest attempt to empower teachers and students with a new teaching aid <http://dgit.in/1kcwUsv>



Oculus Rift inspires Samsung

Samsung is working on its own version of the Oculus Rift, and is said to have already shipped prototypes of "Morpheus" <http://dgit.in/morpheusOR>

Projectors

HOW WE TESTED

Since we deal with variable light sources on the different projectors, a bit of prep work is needed to ensure uniform test conditions. We tested the projectors in a dark room with no reflective surfaces (glass, mirrors, etc). A high gain white screen measuring 6-feet-by-4-feet (with a black border) was suspended 2 metres from where the projectors were kept on a table at a height of 3 feet from the floor. We used a Minolta light meter to measure the light coming from the projectors -- all testing was done after ensuring there was next to no ambient light in the room (before firing up every projector, we ensured the meter showed E or Error, which means not enough light to register).

Performance

We hooked up all the projectors to a standard rig with an HDMI port. The test projectors were connected to the rig via an HDMI cable to run video files and benchmarks off it. To ensure uniformity, all projectors were restored to factory settings before benchmarking

their individual performance. Prime among the synthetic tests was DisplayMate's suite of industry standard display benchmark (for more info visit www.displaymate.com). The program lets you test a projector's image for various things like distortion, sharpness, brightness, colour, pixel density, etc. It's a comprehensive test, used to test not only projectors but TVs and monitors, and we've included only a small snapshot of it in the comparison table. Brightness was calculated by displaying a full white image and taking a reading at the screen's surface, with the light meter's sensitive bulb facing the full glow of the projector's uninterrupted light. We also ran PixPerAn's readability test to measure ghosting and text clarity.

Apart from these objective tests, we watched movies like Avatar, Batman Begins, Up, Transformers, Sin City, and Quantum Of Solace -- all HD 1080p MKV files. We looked for ghosting, inconsistencies in colour, colour flashes and rainbow effects which usually occur while watching fast-paced, colourful

cinematic visuals. For the projectors sporting onboard speakers, we tested their sound quality, too -- but, honestly, they were quite bad, and if you're planning to spend close to a lakh on a projector without investing in a good system, you have another thing coming. We also checked each projector's startup time and its peak operating temperature (near its exhaust vent) through a digital thermometer.

Features and Design

Parameters to differentiate between the projectors -- like type and number of connectivity ports, native resolution, warranty, remote control, 3D support, etc., and specifications that didn't have a direct impact on their performance -- were tabulated under the Features sheet. The projector's build quality, ease of setup, quality of on-screen interface, and other similar salient attributes were tabulated under the Design sheet. After applying our formula to determine winners, we came up with the Best Performer, Best Buy and Editor's Pick projectors. We're sure you'll like them.

qualities of performance that seem to be a hallmark of the manufacturer. This projector had exaggerated blues to the point that blue dominated the colour in almost every frame, wherever it was present. In movies where blues were relatively less -- Sin City, for example -- we found the projector to be pleasantly entertaining and displaying crisp, vivid visuals. But Avatar, let's just say watching it was a bit of an eye sore on this projector. All this is of course in the Standard mode -- Cinema or movie mode, balances out the colours a bit but not without affecting image quality, making the final projected output a bit washed out and relatively dull.

On-board audio of the projector is in line with other BenQ projectors we tested,

with nothing special to write home about. The speakers are loud, enough to fill a medium sized room with audio, but it isn't clear or noise-free beyond the 60-65 per cent volume levels. As we said earlier, no self-respecting projector owner should settle for on-board audio bundled in these projectors, because they're just shoddy and be used as a last resort at all times.

The remote is larger than we expected and has a spring-loaded kickstand under its front lip. We liked the fact that the upper surface of the projector had labels indicating the position of the various connectivity ports, making cable management a breeze since we didn't have to turn the projector over every time we wanted to plug in something else. A nice touch.

BenQ MH680

This is a nice, small and petite projector, smaller than the BenQ W1400 and W1070 in fact, and it comes with its own carry bag. It looks different from the other BenQ projectors as well, owing to that excessive dash of dark blue. The look and feel of the projector is nice, with a pleasant two-toned finish. The top of the lens has a nice, textured, faux-wood panel finish which is a nice touch compared to other lackadaisical projectors.

It's extremely easy to setup. On a completely white image,



BenQ MH680

a moiré pattern with very fine lines was visible across 2/3rd of the projected image and largely to the right side of the projection. Also its top edge had a greenish tinge to it (barely perceptible) and the entire image wasn't neutral, but appeared warm with a slight pink area towards the top right of the frame.

The projector displays extremely sharp and vivid images. The test images in DisplayMate were extremely bright and well portrayed. However, its oversaturation effects were visible when we started watching movies. Avatar highlighted the exaggerated blues in the movie. However, we'd still rate the image and video quality of the MH680 at par of the W1070 (or even slightly better), and both are definitely better than



Foursquare splits into two

The popular location-sharing app is now splitting into two, trying to take on Yelp. Here's how <http://dgit.in/1gYHVy8>



Math genius unlocked!

A brain injury sustained in 2002 turned one man into a mathematical genius. Here's his unbelievable story <http://dgit.in/1iddy1A>

the W1400. However, play enough with its picture settings (sRGB, Cinema, Custom, etc.) and you can easily tweak the projector to throw out the best possible image according to your environment. Despite flipping through different modes while watching movies, we felt this projector kept most colours flat, and didn't make them pop enough. Also, its high brightness levels makes most visuals appear to be washed out – something that the LG and Panasonic projectors didn't suffer from.

Skin tones appear to be a bit more tan than normal – across both Up and Batman Begins and Sin City too. The projector did freeze a little at the point where the two Navis are swimming underwater and the point where the tree falls on Up's house. While watching Sin City, we found the reds to be slightly off, plus there's persistent background noise in the overtly dark shades of black and grey that's pretty much 95% of the movie – you'll notice it only if you sit too close to the projected image, of course. Skin tones aren't accurately portrayed, as well – compared to the LG and Panasonic projectors we'll see later, which are better than all the BenQ projectors in this department, including this one.

The projector's audio is nice and loud, at similar levels to the other two BenQs, and the same audio quality's visible in all three of them – high volume but not very clear sound at over 60 per cent of the volume.

Epson EH-TW5200

The EH-TW5200 home entertainment projector from Epson is a sub-1 lakh rupee device aimed at “budget” customers

– we suppose that that's how they define “lower end of the market” in the projector world these days. It's nice and portable, sporting a compact form factor, and comes with all the bells and whistles expected of



Epson TW5200

a self-respecting multimedia entertainment projector and also includes 3D support.

Immediately after unboxing the Epson projector, we were keenly aware of its compact build and smooth design. For a home theatre projector, with built-in speakers and what not, the EH-TW5200 is quite portable at 2.8 kg and very easy to lug around. What's more, its white enamel shell with a glossy piano finish makes it appealing on the eye – fingerprint smudges aren't at all visible, which is nice. The projector's plastic exterior feels well put together, there aren't many moving parts, and the build is very good – even the Epson EH-TW5200's adjustable back stands are nice and solid, nothing to complain about. The only minor exception being the projector's front stand, which isn't as well-built as its hind legs.

In terms of port placements, all the connectivity options are relegated to the EH-TW5200's back panel – quite convenient and easy to remember. There's a handy set of buttons on top of the projector's shell to launch its menu, keystone settings, selecting source, etc. – nothing that the bundled multimedia remote doesn't provide. There

are indicators in place to denote the projector's lamp running out of juice, or if it's overheating, which is nice. There are sliders to open and shut the Epson EH-TW5200's lens cover and adjust its keystone, while the lens has a manually adjustable focus and zoom ring. The projector's front grille is its main heat vent and while it isn't excessively noisy, it does heat up quite a bit – which can be uncomfortable to touch at times.

BenQ W1070

This projector is about the same size and shape as the W1400 we saw earlier. But it's less appealing compared to the earlier BenQ W1400. Setting up this projector was a breeze, no problem whatsoever. Source detection is automatic and the projector offers various options to adjust the projected image on screen – focus ring, zoom ring and lens shift (up and down) to ensure the image is projected right where you want it to be. In terms of its construction, its front lip has a spring-loaded foot to adjust its height – we feel that having screws is better because in our experience, springs tend to behave erratically at times.

In Avatar, we noticed that projectors (like the W1400 before it) suffer a tinge of the blues, over-saturating most images. That's fine as long as Blue isn't the dominant colour in a frame, but it's a problem in a movie like Avatar – where blue is very prominent, in

almost every frame. Another thing we noticed was that this projector isn't high on contrast like the W1400, which is nice, because it makes for a balanced visual.

The projector did stutter a few times at certain intervals, one or two times, but nothing to spoil the party.

The quality of visuals in Up was slightly better than on the W1400, but the colours looked washed out. In Batman Begins, we felt the skin tones and the beige, brown and greyish colours were recreated well by the projected image. However, in Quantum of Solace's opening car chase sequence the blues and reds were accentuated, and the projector kept pace with the fast-paced action scene, not dropping any frames that we noticed.

Above ₹1 Lakh

LG PF80G

Part of LG's slim, ultraportable series of projectors, this one is quite a small and petite sample that weighs just 2.2 kg. It doesn't have a large footprint and it's quite lightweight. But don't be fooled by the device's miniature dimensions, because it's quite high-powered in terms of performance and doesn't disappoint in terms of features either.

All the projector's connectivity ports are situated on its back panel, making it easy to plug and play any device to the projector. There's a set of touch-sensitive buttons on the top of the projector which light up when the projector is powered on. The projector gives a lot of attention to its aesthetic look and feel – take for example its ivory plastic shell and piano gloss finish, and also the heat vents disguised in an intricate pattern



BenQ W1070



SanDisk's 1TB SSD

The flash storage behemoth announced a 4TB SSD based on its 19nm process technology <http://dgit.in/1oeP8w9>



Larry Page's story

If you always wanted to know more about Larry Page, Google's co-founder, here's your chance <http://dgit.in/1m514Me>

Projectors

of design on its shell. It's all done pretty cleverly on the LG projector's shell.

The shell doesn't heat up all that much, and neither does it produce any noise – which is a good combination for home entertainment enthusiasts. The projector's performance is one of the best we've seen – it's easily one of the sharpest projector's we've seen in this test, projecting a nice, bright and crisp image, one packed with plenty of colour and vividness. It handles fast-paced visuals



LG PF80G

and text equally well, but its on-board speakers could've been better.

Its OSD is one of the best we've seen. It keeps things easy to consume and doesn't overwhelm you with a lot of information in a single window, grouping together information in buckets or groups that's convenient to go through. The remote's handy and works well. You only need to approach the projector to adjust its focus – in case you move it around often – otherwise everything else can be handled off the remote controller with ease.

Apart from MHL, the projector also supports a network sharing feature known as SmartShare, which allows you to connect and project content from a smartphone or PC connected to the same network.

Panasonic PT-AR100

This is one huge projector! It's big, make no mistake, and the

manufacturer has done a great job of packing it in the box and securing it with plenty of styrofoam. As soon as you unbox it, you see a massive lens cap and a piece of tape securing the focus and zoom rings, respectively, and a hard-to-miss instruction sheet telling you how to carefully peel them off without damaging the focus or zoom rings. Just follow the instructions and you shall be on your way with no trouble.

The projector's easy to setup and comes with an exhaustive set of OSD controls, allowing you to tweak and customize every minute setting as per your wish. Its massive zoom and focus ring let you tweak the image on screen. Remove the lens-shift and shift-lock cover to manually adjust the projected image on the screen. Despite being a manual process, the projector gives you enough manoeuvrability to have the projected image exactly the way you want it.

The projector is quite bulky but all that is forgiven when you look at the projector's performance. It's close to stunning, the images from 2 or 3 metres away. Apart from a persistent moiré – which is the only downer in an otherwise



Panasonic AT-R100

stellar projector – the projector passes every test with flying colours. It's as sharp as the LG projector we saw earlier, if not even sharper, and its colour consistency and viv-

idness is breath taking. Its sharpness is even from edge to edge and it's easily one of the brightest projectors in our comparison test. When it comes to performance, we have no complaints with this projector at all.

Its remote controller is very small – but it has enough buttons and functions to remotely control the projector from an adequate distance. It also has a button which switches on the backlight on the remote, perfect for use at night.

BenQ W1400

A very loud projector this, the volume is high enough, but lacks clarity. It heats up like crazy, too. You definitely need a good pair of external speakers to either connect to the source or to its audio-out ports at the back for superior audio performance.

The projector isn't as small as the LG one, nor is it as large as the Panasonic projector, sitting somewhere in between the two in terms of size and dimensions. It has a nice two-toned finish with a white-and-grey colour scheme, giving it a pleasant look. It has manual, zoom and focus rings on top for you to adjust the final output of the image on the screen. It also offers plenty of buttons on the device itself, should you need them, and the remote is large and comfortable and filled with buttons. The remote lights up every time you press a button, which is nice as you get feedback in a dimly-lit room.

However, this projector comes with 3D built-in and a single pair (1 unit) of 3D glasses (active shutter). The projector is largely good, according to our performance tests, but it's oversaturated



BenQ W1400

in the colour blue. Also, it's not very sharp, nor is it very bright, with respect to the final projected image on the screen.

We turned on its 3D functionality and watched some movies in 3D mode, with the glasses on, of course. The experience was quite good, nothing bad to report. Definitely no headaches experienced, but we'd have loved if BenQ had packed in more than one pair of 3D glasses.

BenQ W1080ST

This is almost identical to the previous two projectors in terms of size, dimensions, and shape – like the W1070 and MH680. The projector projected such a wide image that it went out off our screen when kept at a distance of 2 metres from the screen. So we had to reduce the distance slightly so as to accommodate the image within the screen's premises.

Another issue we faced in this projector – probably confined to this particular sample only – was that it suffered from dull edges. In particular, its top left and bottom right corners are less sharp than its top right and bottom left corner. Upon adjusting the focus ring, we noticed that this condition can be flipped – if you want you can have diagonally opposite points in focus at any one point. This is because this projector is sharp only at the centre of its image, and less sharp around its edges. This is of true of other projectors,

Projector Comparison Table	Under 1 lakh				Above 1 lakh				
Brand	BenQ	BenQ	Epson	BenQ	BenQ	Ricoh	LG	Panasonic	BenQ
Model	W750	MH680	EH-TW5200	W1070	W1080ST	PJ WX4141	PF80G	PT-AR100	W1400
Price (MRP) ₹	60,000	80,000	98,699	1,00,000	1,10,000	1,30,244	1,38,000	1,45,000	1,50,000
Grand Total (Out of 100)	58.75	63.48	64.08	63.70	65.66	48.34	63.97	62.34	62.28
Performance (Out of 40)	24.79	27.17	27.51	26.43	26.74	21.69	27.65	27.55	26.66
Brightness (lumens)	2500	3000	1060	7200	5900	3300	690	2800	7200
Contrast Ratio (White/Black)	25000	3000	363.63	6923.1	59000	33000	6900	28000	72000
Time to Startup (sec)	16.7	14	22.3	8	18.7	19	11.4	15	13
Red (lumens)	8	4.1	6.85	4.1	4.1	8.1	2.83	5.66	4.1
Green (lumens)	11.05	8.1	8.8	8.1	8.03	16.3	5.6	11.7	8.1
Blue (lumens)	4.1	4.04	5.4	2.9	2.82	5.6	2.1	2.88	2.85
64 intensities for primary colours	2	2.25	4	2.25	4	2.5	4.25	4	3
Colour triangle	3	4.25	4	4.25	4.25	4.25	4.5	4.5	3.5
Moire pattern	5	2.5	0	5	5	0	5	0	5
PixPerAn readability test	10	12	17	10	12	9	10	9	10
Curved edges	8	10	10	10	9	8	10	10	9.5
Corner clarity	7	7	8.5	8.5	6	4.5	8	9.5	8
Temperature (Celsius)	61.3	65.6	81	68.8	71.7	56.2	37.1	48.8	57
Avatar 1080p	8	8.5	9	8.3	8.3	6.5	9	9	8
Up 1080p	7.75	8	8.5	7.5	7.75	6.5	8.5	8.5	7
Batman Begins 1080p	7.5	7.5	8	8	7.5	6.5	8	8.5	8
Quantum of Solace 1080p	8	7.5	8	8	8	6.5	8	8.5	8
Transformers 3 1080p	7	7	8.5	7	7	6	8.5	8	7
Sin City 1080p	8	7.25	9	7.5	8	7	9	9	7.25
Features (Out of 40)	21.56	22.73	22.81	24.06	25.56	15.81	22.49	21.02	22.29
Display type	DLP	DLP	3LCD	DLP	DLP	DLP	DLP	TLCD	DLP
Native Resolution	1280 x 720	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1280 x 800	1920 x 1080	1920 x 1080	1920 x 1080
Eco Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lamp Life (hours)	4000	4000	5000	3500	3500	3500	30000	NA	3500
Power Consumption (W)	275	270	287	373	353	312	160	280	397
Rated Noise (dB)	34	33	37	33	33	NA	27	29	33
3D ready	No	Yes	Yes	Yes	Yes	No	No	No	Yes
3D glasses	No	No	Yes	No	No	No	No	No	Yes
Wireless remote	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Onboard speakers	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Audio in / out	2	2	2	2	2	2	2	0	2
HDMI ports	2	1	2	2	2	1	2	2	2
VGA ports	1	1	1	1	1	1	0	1	1
USB port	0	1	1	0	0	0	1	0	0
Component	0	1	1	0	0	0	1	0	0
Network support	Yes (Wi-Fi)	No	No	No	No	No	No	No	No
Weight (in KG)	2.6	2.8	2.8	2.75	2.85	3	2.2	8.6	3.9
Warranty (years)	3	3	2	3	3	2	3	2	3
Build Quality & Usage (Out of 20)	12.40	13.58	13.76	13.21	13.37	10.85	13.83	13.77	13.33
Body	3.5	3.5	4.5	3.5	3.5	4	4	3.5	3.5
Stand	3.5	3.5	4.5	3.5	3.5	3	4.5	4.5	4
Ease of setup	5	5	5	5	5	3	4	5	4
Navigating the interface	9	9	9	9	9	8	8	7	7
Keystone adjustment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Password & Parental Lock	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes



Chip detects poison

While detecting a deadly poison that can be found in food or a potential terrorist weapon, this chip can help <http://dgit.in/1hjIPKE>

Should game stories matter?

Do you think game stories should matter? Why? Read this interesting piece which raises some important questions <http://dgit.in/1twG6dK>

Projectors

too, but the loss of sharpness in this particular projector is far greater than on any other in this comparison test so far, which is a bit of a downer on that front.

Also, this projector suffered the most in terms of frame stuttering. This is noticeable in *Avatar*, especially, where the chopper is flying through Pandora and the scenes where the two male and female leads are flying around with their birds and also when swimming underwater, that's the part where slight stuttering was noticed.

This projector is exactly like the MH680 but completely white in colour – even its accompanying remote is white in colour, but it's exactly identical to the MH680's black remote. Again from a build and design perspective, we don't like the spring-loaded kickstand at the front lip of the projector, because of its suspect build quality. We suppose it's a cheaper alternative to screwed on adjustable stands and it's not like the spring-loaded ones don't get the work done, which is good enough for most people.

Ricoh PJ WX4141

The only ultra-short throw projector in this comparison, the PJ WX4141 needs to be placed between a couple of inches to a foot away from the display screen for the projector to cast a wide, large image on the screen. Setting up the projector isn't as easy as some of the traditional projectors we've seen so far, because it needs to be oriented with its lamp and lens facing upwards, toward the ceiling.

To its credit, the projector has auto keystone correction, which works like a charm.

Depending on its alignment with the screen's plane, it adjusts the final screen output within a second of its new alignment. It really works very well.

This seems to be a 1280x720 pixel resolution projector which brings the total count of sub-Full HD projectors in this comparison up to two. We're surprised that manufacturers are still dishing these out when everyone is talking about 4k.

In the 64 intensity primary colours test we saw the right edge of the screen smudging, while the left edge was fine. The 256 intensity test results were very good, but we were in for a rude surprise when we did the horizontal resolution wedge test. Here instead



Benq W1080ST

of seeing a black and white image, we saw a blue and white image (with moiré pattern, of course) – and it's the only time ever that we've seen a blue and black pattern in place of the black and white pattern. Obviously, something's off here, it isn't normal behaviour.

But then we restarted the projector and all was fine. Black and white sanity was restored.

While watching movies, *Avatar*, for example... we did find the projector following in the lead of the BenQ projectors – exaggerated Blues and heavy on contrast, despite throwing a bright, largely sharp image. However, whenever there was a bright, white portion of the



Ricoh PJ WX4141

frame, we did see moiré patterns, which is disappointing. Sadly, throughout all our movie watching and text reading sessions, the Ricoh projector underperformed and didn't get a big vote of confidence from our benchmarks.

It's quite similar to all three of the BenQ projectors (barring the very first one we reviewed), and it has a black front panel next to the lens which has few menu and multimedia buttons to interact with the projector. A bundled remote houses all the relevant buttons and functions to remotely tweak the projector's settings up to your exact standards.

Winners

The LG projector was really one of the best we've tested this year and in this comparison and it pipped the Panasonic projector (which is probably the best projector out there, if it weren't for its persistent moiré pattern) to come out on top in terms of overall performance. As a result, the LG PF80G Projector wins our **Best Performer Award**. It really gives us the true picture as far as the potential of LED projectors is concerned, and also manages to bag our **Best Buy Award** for projectors above the ₹1 lakh category. It

really is the one you should purchase if you are close to spending anywhere close to its asking price – you won't be disappointed.

The Panasonic projector deservedly wins our **Editor's Pick Award**, simply because it is an outstanding projector which misses out on the Best Performer award by a very thin margin. It is ideal to enjoy Full-HD large screen entertainment from movies and sports to video games. Whether this projector is used for a house party filled with friends or for family movie night, the PT-AR100/AH1000 will provide everybody with vivid, clear and stunning video content – we have spent enough time this month reveling in its wonders.

For projectors under ₹1 lakh, you shouldn't look any further than the BenQ MH680, which is easily the best BenQ projector we encountered during the course of this comparison test. It's one of the brightest projectors we've seen, with very good visual output and all the bells and whistles that make it an ideal companion for your home entertainment setup. A very well deserved **Best Buy Award** goes to the BenQ MH680 projector. A true winner.

How many mobile phones?

An article filled with facts and figures about the number of mobiles activated till date, and other such gems <http://dgit.in/1jCNbpX>



Worst e-reader. Ever

The US Navy just developed what everyone's calling as the worst e-reader ever. Take a look: <http://dgit.in/Ri0YHb>



Royal Rumble

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Flagship smartphones are worth the wait, and (almost) every year manufacturers bring in some new and updated features and hardware. This year in the Android segment we saw Samsung, Sony and HTC bringing in their most advanced and up to date devices which have left the consumers, and us, craving for more.

A perfect flagship smartphone should include a fine blend of design and build quality along with a sturdy and stable UI and of course, powerful hardware that can deliver the best performance package. Keeping that objective in mind, we're doing a head-to-head comparison of three of the best flagships available today. We've decided to put all three phones through the grinder and crown the survivor. Well, not literally of course.

Build and Design

The real aesthetic behind a smartphone is the way it has been crafted. The first thing that one considers is the way the device looks, and then one jumps onto the hardware and performance capabilities.

Samsung has been criticised year after year for having the same design ever since the launch of the Galaxy S3. In our opinion the Galaxy S2 was the last Galaxy flagship smartphone that had drool-worthy design.

With the Galaxy S5, we still have the familiar, curved design with a huge splash of plastic, just as we saw on the Galaxy S4 and the S3. Now plastic is not bad, but the quality of plastic used on the S5 doesn't give the impression of what you call 'premium'. The display sees a slight bump and now we've a 5.1-inch full HD, Super AMOLED display which is one of the best and most vibrant displays that we've seen. It sports a chrome finished frame, just like the Galaxy Note

Android keyboard alternatives

Hate your phone's built-in keyboard app?

Replace it with one of these fine gems

<http://dgit.in/1r3kkRd>

Chrome runs faster

If you're an Android user, here's a nice little hack that can make your Chrome experience even better

<http://dgit.in/S3eU8S>

Android Phones



Samsung Galaxy S5

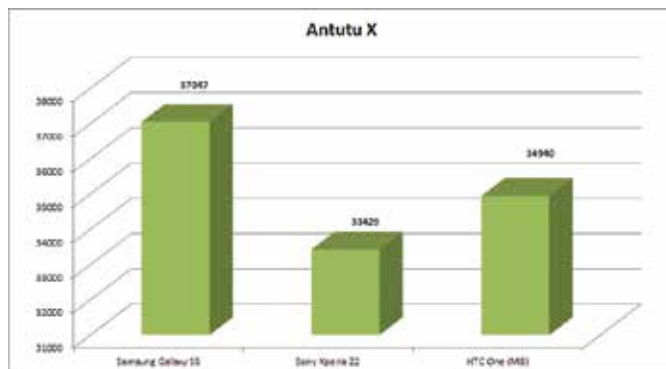
3 and the back is again low-grade plastic. Thankfully, there is a new, perforated pattern on the back panel. The back also houses a new 16MP camera and a heart-rate monitor. Under the back panel we find a microSD card slot, a microSIM card slot and the 2600mAh battery. The back panel also has a rubber lining on the inside to give some protection against water and dust. The most hyped feature, the finger-print scanner has been incorporated into the physical home button.

Sony has been producing some of the best looking smartphones in its Xperia range and the Z2 is a fine example. The Z1 was an excellent looking smartphone and with the Z2, things get better. The Z2 offers the same dimensions and design as the Z1 with the front and back glass panels and metal frame in the middle. Sony has managed to reduce the bezels further and increased the display size to 5.2 inches. The display is also a brand new IPS panel which offers much better viewing angles than the Z1. Sony has also dropped the idea of fitting an in-house screen protector which, we think, isn't a bad idea. The most crucial update in the design is the reworked loudspeakers. The Z2 has

stereo speakers on either side of the display and now offers much better volume. The ports are again covered with plastic flaps but this time they feel much stronger. Overall the Z2 gives off a premium smartphone vibe but the only issue one might face is the glass finish which leads to a lot of glare and of course the horror of getting scratched easily.

HTC has always focused on classy looking smartphones. Last year the HTC One was the best looking Android smartphone and this year, the HTC One (M8) does it again. The elegant metal design and detail is worth the money. HTC claims that the new handset consists about 80% of metal and the rest is plastic and glass. The One (M8) sports a 5-inch, full HD Super LCD3 screen which is a considerable bump from the last year's 4.7-inch display. The capacitive Android navigation keys have been replaced with on-screen ones, giving more room for the display. The touchscreen is very fluid and the response time is quick and smoother than most of the smartphones we've tested. The back has a brushed metal finish and houses the dual-lens camera with a dual-tone LED flash. There is also a laser engraved HTC logo which adds to the oomph factor to the smartphone. Maybe the only let-down is that the smartphone does not offer dust and water resistance. Also, having a metal body means that it's prone to minor scuffs and bumps.

It's a strong fight between the Xperia Z2 and the One (M8). While the Z2 offers a snazzy looking glass finish and environmental resistance, the One offers you the elegance of an all



The Galaxy S5 is the obvious winner here.

metal body and droolworthy styling to die for.

Hardware and Performance

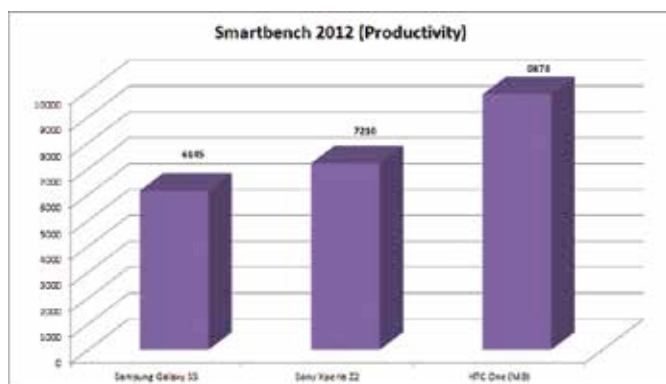
The Samsung Galaxy S5 runs on an octa-core Exynos 5 chip coupled with 2GB of RAM and a Mali-T628 MP6 GPU. The other two run on the new Snapdragon 801 processor with the same Adreno 330 GPU but the Z2 carries 3GB of RAM while the One (M8) has 2GB. To test out the performance level of the hardware we carried out some benchmark tests to get some figures for comparison. We ran benchmark apps like 3DMark, Antutu X, Quadrant Standard and Smartbench 2012 and here are the results:

The HTC One (M8) does get a higher score, but in day to day performance, all the three smartphones provide a flawless performance package.

Graphics intensive tasks like gaming and playing HD videos were a piece of cake for all three smartphones.

Everyday tasks like internet browsing, checking emails, social media update, reading news, listening to music or just watching movies was equally good on all the handsets. The OS is very stable on the three smartphones but if we're truly brutal, then the Z2 and One (M8) offer a slightly better performance experience than the Galaxy S5.

Comparing the displays, it's Super AMOLED against IPS LCD against Super LCD3. The resolution of the display is the same on all three but due to the different sizes there is a slight difference in the pixel density. The Galaxy has a 5.1 inch display which means 432ppi, the Xperia Z2 has a 5.2 inch display (424ppi) and the One (M8) has a 5 inch display leading to the



And the HTC One (M8) takes the cake here

Google I/O predictions

According to an analyst, expect to hear a lot about wearables and design at this month's Google I/O event <http://dgit.in/TGCb1N>



Samsung's new watch

Reports are pouring in about the South Korean giant's new smartwatch, and it doesn't need a smartphone <http://dgit.in/1osfw3i>

highest density of 441ppi. The Super AMOLED display on the Galaxy S5, in our opinion, is one of the best displays that we've seen in a long time. The colours and brightness levels on the display are excellent and viewing angles are also great. The display on the Xperia Z2 has improved a lot from the Z1 as Sony has finally put in an IPS panel making the viewing angles much better. With technologies like X-Reality, Triluminos and Live Colour LED, the display is actually quite crisp and offers true colours. The display on the HTC One (M8) is quite bright and offers excellent brightness levels. Out of the three devices, the One (M8) offers the best touch response and the display feels silky smooth.



Does super-slim = super-awesome?

The two major hardware updates that were seen this year were the addition of a heart-rate monitor and a fingerprint scanner on the Galaxy S5. Now we know that HTC and Apple have already incorporated a fingerprint scanner in their devices, but this is the first ever PayPal approved scanner. This means that you can perform PayPal transactions by just swiping your finger over the scanner. The heart-rate monitor is placed at the back right under the camera where you need to

keep your finger to determine your heart rate. Both the features work quite well and Samsung deserves a pat on the back for the new hardware additions.

Sony hasn't made any major hardware changes and stands apart with its simpler design language. The only major and welcoming hardware change we noticed was the new loudspeaker. The Z1 and the Z1 compact had a loudspeaker at the bottom, which not only lacked volume. The Z2 now has dual-stereo speakers on either sides

of the display which seems like the perfect placement.

The newest addition from HTC this year has been the new duo-lens camera with a dual-tone LED flash. Having a dual-lens system allows you take pictures and instantly refocus on the area you want. Also the new dual-tone LED flash fires a warm or a cool beam of light depending on the colour temperature of the subject(s).

User Interface

All the three smartphones run on the latest Android 4.4.2 KitKat update and apart from the usual Android goodness, each smartphone offers a personalised experience thanks to the customized UI that's layered atop the core OS.

Samsung's TouchWiz UI has evolved over the years and even today it offers a vibrant and colourful experience. This is primarily to make full use of the Super AMOLED display. The new TouchWiz UI brings in a new lockscreen, notification bar with quick toggles and of course new apps. Samsung has also integrated a Flipboard based app called My Magazine which can be easily accessed with a swipe right from the first home-screen. There is also a health oriented app called S-Health which keeps a track of your workout and food habits. The system menu has also been overhauled with new round icons. The new TouchWiz does look pretty, but we wish it was a little smoother and bug free.

Sony's UI is simple and minimalist with good looking icons and some useful apps. The one thing that we love about Sony is that they don't make a mess of their UI and offers something which doesn't take a lot of time to get used to. Sony also doesn't have a lot of bloat-ware which

HOW WE TESTED

Testing a smartphone isn't as simple as it seems. The sheer diversity makes direct comparisons very tough, and hinge on a lot of factors.

Performance

First off, we run a series of benchmarks to get a set of numbers allowing us to directly compare the performance of all the devices - processor, graphics, storage and even the web browser. Each platform largely has its own set of benchmarks, with the Browsermark 2.0 and the Octane tests being true cross platform ones. We have given equal weightage to all benchmark scores, so as to not put the other platforms at a disadvantage. These tests give us an idea of how the hardware performs, in isolation as well as comparatively.

Shifting to real-world use, call quality is of paramount importance in a smartphone, and we tested all phones in three different signal zones - full signal, 50% signal and very low signal, usually 1-2 bars. Points are reduced for every call drop, voice echo and audio break situations and also when audio is completely lost. To keep the testing on an even platform, the same SIM card from the same operator is used on all phones, so that any network variation does not have an impact on the results. Usability is critical, which is why we look at the user interface on the device, the quality of the on-screen keypad, variety of apps preloaded, etc. The build quality, materials used, placement of ports and keys, are other aspects that are tested and rated.

Features and Design

Multimedia, with the current generation of smartphones, gains a lot of importance. We have tests for display quality, viewing angles, performance of the speaker etc. We also test and rate displays on aspects like usability in sunlight.

The battery life test was done to see how long the phone lasts on a single charge. The usage included video playback, web browsing and IM chats, a dollop of Angry Birds and some voice calls, all with 3G and Wi-Fi connected throughout. The hardware and specifications do have considerable amount of weightage to them, and we have allocated points for everything like processor type, display type, etc., to ensure every little nuance is noted and rated accordingly

Android 4.5 wishlist

This is a pretty good list of what features we would like to see in Android 4.5, expected to launch soon <http://dgit.in/1p4jd1z>



Project Tango

Google's Project Tango is expected to debut on tablets soon, spearheading 3D tracking to a new level <http://dgit.in/1p4kMfX>

Android Phones

	Samsung Galaxy S5	Sony Xperia Z2	HTC One (M8)
Display	5.1 inch Super AMOLED Full HD (432ppi)	5.2 inch Triluminos Full HD with Live Colour LED (424ppi)	5 inch Full HD Super LCD3 (441ppi)
Processor	Quad-core 1.9 GHz & quad-core 1.3 GHz, Exynos 5 Octa 5422	2.3GHz Quad-Core Snapdragon 801	2.3GHz Quad-Core Snapdragon 801
RAM	2GB	3GB	2GB
GPU	Mali-T628 MP6	Adreno 330	Adreno 330
Storage	16GB, expandable via microSD	16GB, expandable via microSD	16GB, expandable via microSD
Rear Camera	16MP, 4K recording capability	20.7MP, 4K recording capability	4MP Duo-lens, Full HD video recording
Front Camera	2.1MP	2.2MP	5MP
Weight	145gms	158gms	160gms
Battery	2800mAh	3200mAh	2600mAh
OS	Android 4.4.2 with TouchWiz	Android 4.4.2 with Xperia UI	Android 4.4.2 with Sense 6
Notable extra features	Fingerprint scanner, heart rate monitor, water and dust resistance	Waterproof and dustproof, Digital Noise Cancellation technology	Duo-lens camera with refocussing, Blink-Feed
Price (₹)	51,500	49,990	49,990

makes it even better. For customisation there are also some theme options available which gives a nice, personal touch. Overall the UI on the Z2 is very fluid and everything works perfectly well, there are minor issues here and there which should be ironed out.

The new Sense 6 on the One (M8) is pretty much similar to the Sense 5.5 but there is an all new lockscreen which includes gestures which work even when the screen is not active. Swiping to the left directly takes you to

BlinkFeed and swiping to the right takes you to the first home-screen. You can also double tap on the lockscreen to activate and deactivate the display. There are also some colour themes which make the UI much more colourful. Apps like the camera and BlinkFeed have been updated and offer more features. The Sense 6 UI offers a great experience and doesn't stutter or lag anytime.

Battery

In our standard battery test, we charged all the three smartphones to a full 100% and then pumped up the brightness to full and connected the smartphone to Wi-Fi. Next we played a full HD video for one hour to see the amount of battery loss.

The Galaxy S5 has a 2800mAh battery, the Z2 has a massive 3200mAh battery while the HTC One (M8) has a 2600mAh battery. After running the tests we compared the results and found that the Galaxy S5 offers the best battery backup. All three smartphones also offer their own battery saver modes and quite frankly the Galaxy S5 offers

the best where apart from disabling some features, it turns the display into monochrome thus saving a lot on the juice.

Camera

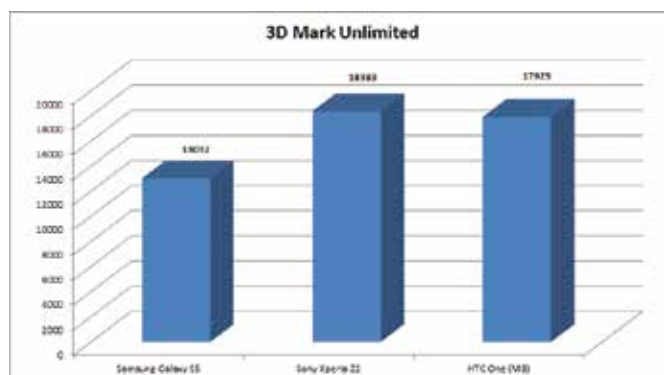
Smartphone cameras are evolving and are on the verge of killing point-and-shoot cameras. With improvement in sensor technology and optics, camera modules on the smartphones are offering high resolution and great low light performance.

Samsung has bumped up the camera module and now a new 16MP camera has been used for the Galaxy S5 with a 1/2.6" sensor. It's still smaller than the one on the Nokia Lumia 1020 and even the Sony Xperia

Z1/Z1C but it does manage to take some good looking images. Some of the features of the camera include dual shot, simultaneous HD video and image recording, geo-tagging, touch focus, face and smile detection, image stabilization, HDR and so on. The auto-focus on the S5 is really fast for a smartphone camera. Images don't have high contrast and colors are a bit neutral which is a good thing. Pictures are slightly soft and lack sharpness. We can attribute this to a lower shutter speed and also, possibly, to over-aggressive noise-reduction algorithms. Apart from the various modes, there is a selective focus mode as well, which has become a necessity in smart-



The gorgeous HTC One (M8)



The scores are actually quite close here

Question on Driverless cars

As everyone's excited about driverless cars, here's an important question that no one's answering
<http://dgit.in/1jgbi9C>

Tiny next-gen consoles

There's absolutely no doubt that future gaming consoles are destined to be smaller than ever. Here's why: <http://dgit.in/1gZMcM>

INCOMING: MANY MORE FLAGSHIPS

We have only got into the second quarter of this year which means there are a number big devices lined up for the year. For the ones who were disappointed with the current line of flagship smartphones, there is good news. Various brands are yet to show off some of the devices including LG, who has already started giving teasers of their next BIG flagship smartphone, the G3. The smartphone has been scheduled to be announced on the 27th of May and is said to feature a 5.5 inch quad-HD display, a Snapdragon 801 SoC, and a 13MP camera with 4K video capture. Various images of the smartphone have also leaked revealing a metal body design and the availability of three colours including Black, White, and Gold. Now this could be a great entry by LG as it seems quite heavy on specs and knowing LG, it could be priced at a competitive price. Just to keep the consumers on their toes, LG has already announced a new flip-case with a circle window for quickly checking notifications and receiving calls.

Another smartphone to look out for is the recently announced OnePlus One, a smartphone by a Chinese brand OnePlus who are on a mission with the motto, "Never Settle". The smartphone seems to be a Nexus killer boasting a premium looking design and having customizable firmware and high-end specs with prices starting at



just \$299. The One comes with a 2.5GHz Qualcomm Snapdragon quad-core Krait 400 processor. It features Adreno 330 for high-end graphics and a 5.5-inch full HD IPS LCD display with 401ppi. The display panel is protected with Gorilla Glass 3 protection. It has plenty of RAM at 3GB and comes with 16GB and 64GB variants. Also, it doesn't come with a stock or company UI. The OnePlus One features CyanogenMod 11S which has been slightly customized for the smartphone. Hopefully we will see the device heading the Indian shores in the future as the official announcement did not include India as its market.

How can a flagship story be complete without mentioning Apple? Yes, Apple will be announcing its next iteration of the iPhone at the WWDC event this year. Rumours have been suggesting that Apple is apparently planning to announce two devices this year, shifting to larger 4.7 and 5.5-inch devices which means we would see some overhaul in the design. Other features will include a new iOS 8 update focusing more on health related apps as almost every manufacturer has started bringing in health bands and apps to

the smartphone world. This could also mean that the new iPhone will feature a heart-rate monitor like the one on the Galaxy S5.

We are also hearing that Sony has already started working on the Xperia Z3 as a few months ago the company clearly stated that it will start adopting a 6-month upgrade cycle so that it can provide updated products to the consumers. Sony has emerged as one the best smartphone brands since last year and has been really pushing hard to get closer to brand like Samsung and Apple. The only issue we see with the 6-month upgrade cycle is that Sony will have very less time to bring in something new or innovative that will set it apart from its older devices.

Ex-Google owned brand, Motorola, is also expected to announce a flagship smartphone with high-end specifications including a 5.2-inch display, Snapdragon 800 quad-core processor, 2GB of RAM, 32GB inbuilt storage, a 12MP snapper and Android 4.4.3. The company has been selling smartphones with a great set of features at very competitive pricing, so could the next device from Motorola be a high-end smartphone with a low price tag? Only time will tell.

phone camera apps to give the feeling of shallow depth of field. You need good lighting conditions as well as proper contrast between the foreground and the background. The highlight here is the video recording as the Galaxy S5 offer 4K video recording capability which looks stunning. The videos take a huge amount of storage so if you are planning to record a lot of UHD videos, you better get a 32 or even a 64GB microSD card.

The 4K video playback is smooth and you can also pinch-zoom while playing the videos. In practical terms though, the 4K video recording feature is a complete waste. Not a lot of people own a 4K display today and with the file-size going over 300MB for a minute of video, requiring massive investment in storage if you want to store all the videos you shoot. Also, have you considered the bandwidth that you'll need to share that video?

Sony is all about photography. While the Xperia Z1 and the Z1 Compact had excellent camera units, with the Xperia Z2 it just gets better. The camera module is similar to what we had seen earlier, incorporating a 1/2.3" sensor with a G-lens and a 20.7MP resolution along with Sony's patented technologies including Exmor RS, Bionz and so on.

So what's new? Well, the Z2 offers 4K video recording capabilities and slightly improved picture quality. The UI is same as the Z1 and Z1 Compact with added modes for 4K recording and Timeshift video. You can add several effects as well which only work at 8MP. Capturing pictures is fast and processing doesn't take an eternity. We did face minor issues here and there but overall the camera app is easy and fast to use.





Top 10 data breaches

In the past 12 months, there've been a lot of data breaches. Here's a list of the 10 most high profile hacks. <http://dgit.in/1pmfhXa>



Raspberry Pi hacks

Thought you couldn't do a lot with the Raspberry Pi? Think again. Open up your mind. <http://dgit.in/1nfCLxX>

Android Phones

Picture quality is sharp and colours turn out to be very accurate. Image processing is quite quick and while this is no low light wonder, the images produced even in low-light are of acceptable quality. Even the auto-focusing system is pretty fast and quickly shifts as you shift between objects. While it's not very practical to shoot 4K videos, it's definitely the "next big thing" as far as mobile cameras are concerned. This is where the next round of camera wars will be fought.

4K videos on the Xperia Z2 look great. Colours, contrast and sharpness is all controlled and the auto-focus works like a charm. There is also a new mode called Timeshift video, which allows you to take a video and then select a section of that video and slow it down to give an excellent slow-motion effect that's very cool to behold (and display). The Z2 is an excellent camera if you love shooting pictures and videos, and with the added advantage of being waterproof, you can even shoot in the rain or even in a pool.

The camera on the HTC One has been upgraded with the new dual-lens system which allows you to refocus your images and have a shallow depth-of-field giving a natural feel to the pictures. There is also a duo-tone flash which automatically

throws a warm or cool beam of light according to the conditions. The camera app has been redesigned with major modes accessible from the icon on the bottom right. It opens up a large window with big icons to select any shooting modes which include single camera shot, video, Zoe, Selfie (opens up the front camera), dual capture, and a panorama mode. You also get some tweaking options such as ISO, exposure compensation, white balance presets, some filters, and also a scene mode which includes HDR, night mode, portrait, handheld, macro mode, and so on. There is also a manual mode which gives you total control of your focus, ISO, shutter speeds, exposure compensation and colour temperature. A number of people have criticized the low resolution of the sensor on the HTC One. Yes, it only supports 4MP pictures but it doesn't mean that the pictures produced are of low quality. Coming back to the capabilities of the camera on the M8, pictures come out quite well and the camera app is super quick to take pictures. Thanks to the dual-lens system, when a picture is taken in optimum light (without flash) you can immediately select the picture and refocus on the area you want. There are other post-editing tools including a back-



You just can't stop staring at this, can you?


ground shader, season effects, 3D mode, stickers and also a neat feature that allows you to cut out parts or people from an image and paste it onto other pictures. You can add filters rotate, crop and even add frames. Capturing video is pretty standard on the M8 and you can capture a maximum resolution of 1920x1080. Audio quality in the videos is decent and sounds pretty clear but we wish there was a sound normalization as some high levels of audio sound terrible. Now we know that it can't shoot 4K videos like its competitors, but the question here is, do you really need 4K video recording? Full HD videos, in our opinion, are sufficient enough and anything beyond the resolution just seems overkill on a portable device.

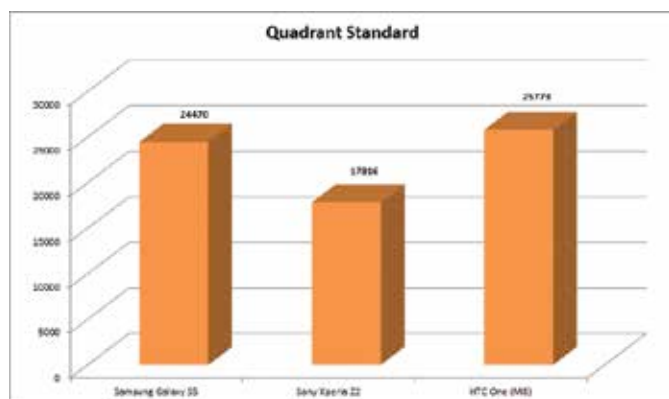
Conclusion

The Galaxy S5 is a considerable update from its predecessor, but when kept against the Xperia Z2 and the HTC One (M8) it just doesn't seem to reach the expectations. We really wish that the design and

build quality on the Galaxy S5 was improved although we did love the fact that Samsung brought in a heart-rate sensor and a fingerprint scanner to the device.

In the end, it's actually very hard to decide between the three phones. They're all excellent and while they do have their negatives, each offers so many exceptional features that it's actually quite hard for us to categorically state that one particular feature is much better than the other.

It's too tough to call. The Z2 offers an excellent camera with a good looking design and powerful hardware, not to mention the weather-sealing. The One (M8) is easily the most desirable in terms of looks design and it's insanely powerful and very fluid to use. The Galaxy S5, despite being the most uninspired in terms of design, is easily the most innovative and interesting phone of the lot. Which phone do you think is the best? Write in to us at editor@thinkdigit.com and tell us what you think. 



The Xperia Z2 seems to be lagging a bit here

Kick it up a notch (with tech)



Jayesh Shinde
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“Before the tournament kicks off on June 12 however, a volunteer who suffers from paralysis is to publicly demonstrate a never-before-seen mind-controlled exoskeleton that will allow him or her to walk during the opening ceremony”

In a land where the natives literally live and breathe the sport unlike any other, arguably the most popular sport on the planet enters into its most cherished competition. Starting in the second week of June, the footballing world will embark upon a month-long party that's unrivalled anywhere in the world. As Brazil finally hosts the Coupe du Monde after a gap of 64 years, the elite teams of the sport, spurred on by some of the best players in the world, will slug it out for the ultimate bragging rights – to be crowned the 20th champion and reign supreme. It's something I'm definitely looking forward to, like many of our readers. After the big election juggernaut and the end of IPL, I have no doubt that football frenzy will grip the nation, and with good reason.

The upcoming FIFA World Cup is historic for one big reason. Technology is going to play a big part in the games, to a level we've never seen before. And it's all for the better. Right from the ball being used to a revolutionary new way of finding out whether a goal has been scored or not. From a mind-controlled exoskeleton to reaching new heights in the event's broadcast – it will all unfold in Brazil later this month. And the game of football will never be the same.

Take the official ball for the tournament a.k.a. Brazuca. A new structural innovation with unique symmetry of six identical panels alongside a different surface structure is what will provide the ball with enhanced grip, touch, stability and aerodynamics on the pitch. Made by Adidas, the ball claims to be less unpredictable and more accurate compared to the Jabulani ball (from the 2010 World Cup) with a rougher surface in the form of long, deep seams. This helps agitate the air flowing over the Brazuca ball better than ever and reduce the trail of “wake” left behind it – the chief reason behind any football's unpredictability. The ball has also been tested for 2.5 years and has received approval from 600 of the world's top footballers including Messi, Casillas, Schweinsteiger and Zidane, to name a few. This is a good sign, that the fundamental ball is being enhanced by new tech and research. Take a look at the official video detailing the manufacturing process behind the Brazuca ball: <http://dgit.in/brazucaFIFA>

To put the issue of contentious goals to bed and close calls whether the ball has crossed the line or not, FIFA is implementing a revolutionary Goal Line Technology for the very first time in

a tournament of the scale of the World Cup. It requires every stadium to be equipped with 14 high-speed cameras, with seven of the cameras tracking each goal line plane. As matches are played the position of the ball is tracked in 3D and in real-time. If the ball crosses the goal line, the match referee is alerted within one second on a wristwatch that is synced to the GoalControl system. This promises to make controversial decisions, like England's disallowed goal against Germany in 2010, a thing of the past. Take a look at how this revolutionary new system works: <http://dgit.in/FIFAGoalline>

Sony and FIFA are also working together to capture and broadcast the upcoming World Cup in 4K, making it the first such tournament in the world to do so – I mean, what better way to promote and accelerate the adoption of 4K than capturing the attention of the largest captive television audience in history, right? In addition to that, Prozone, the UK software analysis company that tracks EPL players during games, is planning to erect mobile cameras at all venues to give managers enough data to analyze their players' performance. Did you know that players spend less than 3 minutes on the ball in any game? What do they do for the rest of the 87 minutes? What's their position? All this data is captured by Prozone's tech, and it definitely aims to excel and improve player output.

Before the tournament kicks off on June 12 however, a volunteer who suffers from paralysis is to publicly demonstrate a never-before-seen mind-controlled exoskeleton that will allow him or her to walk during the opening ceremony. According to the Miguel Nicolelis, a Brazilian neuroscientist, this special suit will allow the person to walk on the pitch using only their thoughts to guide their movement until they kick the football and mark the opening of the World Cup – and also the next big era in brain research. See more of the Walk Again Project: <http://dgit.in/WalkAgainProject>

Let's just hope there are no Vuvuzelas to spoil the show, aye? Have a good World Cup! 🇧🇷

Bazaar

THE LATEST PRODUCTS REVIEWED FOR YOU

The Digit Test Centre receives hundreds of products every month. Each of these products is put through a series of tests and is finally given a score. The final score is arrived at after considering a number of factors and evaluating them in terms of features, performance, value for money, build quality, and, in the case of software, even ease of use.

For better understanding of our ratings, here's a quick guide to our overall score



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- 130 | BenQ BL3200PT
- 131 | WD My Passport Slim



Solar roads

Ever wondered what roads paved with solar panels are capable of? Find out here: <http://dgit.in/1jHo7yd>



The Google Bully

What happens when Google "accidentally" decides to blacklist an innocent site? <http://dgit.in/1r37wKq>

Lava Iris 406q

The affordable quad-core

With more and more smart-phones getting the quad-core processor treatment, the low-end range isn't far behind. With manufacturers bringing in quality hardware at a much lower cost, the market is becoming competitive by the day and it's in this market that Indian smart-phone maker Lava recently announced the Iris 406q.

At just ₹7,000, the smart-phone is worth consideration. Other features of the smart-phone include a 4inch 480p display, dual-SIM card slots, a 5MP rear fixed-focus camera with an LED flash, a front VGA camera, a 1700mAh battery and runs on Android 4.3 JellyBean. The build quality of the Iris 406q isn't the best,



Price
₹6,990

but is quite decent for a budget smartphone. The handset has an all plastic body and design and the back panel has a glossy finish. It feels solid in the hand and kind of reminds us of the iPhone 4/4S. The LCD display and the touch-panel didn't impress us much as viewing angles were terrible and the touch response was not the smoothest.

In the performance department the Iris 406q does a good enough job as the OS feels smooth. Even the synthetic benchmark tests proved that one can get a decent, performance-packed smartphone at a low price tag. The test results showed that in certain cases the Iris 406q could match the performance levels of the Moto G.

If you are not brand conscious then the Lava Iris 406q is actually a decent buy and worth the money and perform better than most phones in this price range.

Kunal Khullar



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Design	65

Specifications

Display: 4 inches LCD panel with 800x480 resolution (233ppi); **Battery:** 1700mAh; **Storage:** 4GB, expandable via microSD card; **Camera:** 5MP rear with LED flash, VGA front; **SoC:** Snapdragon 200; **CPU:** 1.2GHz quad-core; **GPU:** Adreno 302; **RAM:** 1GB; **Operating system:** Android 4.2; **Connectivity:** 3G, W-Fi, Bluetooth, Dual-SIM

Contact

Lava Mobiles
Support: <http://www.lavamobiles.com/support>

ADATA DashDrive AE800

A backpacker's essential accessory

ADATA drives with the rubberized exteriors are known for their durability but when we came across this product we were a bit skeptical. The drive comes with 500GB of internal storage, Wi-Fi 802.11n providing a maximum bandwidth of 150 Mbps, and a power bank rated at 5200 mAh. ADATA claims that the device can stream 1080p content to three users simultaneously. Which is true under certain conditions. However, if you were to take a proper 1080p video (25 FPS, RGB 4:4:4 at 8-bit colour depth) then it would need a bandwidth of 1.19 Gbps which is way higher than what this device is capable of. So no, this device cannot stream uncompressed 1080p to even one user.

The power bank is a much appreciated feature since folks who are constantly

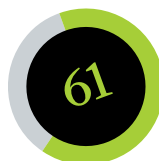


Price
₹11,950

travelling need not carry one extra gadget with them. Data transfer speeds are average, ranging between 80-90 MBps on sequential data while assorted data can take the speed all the way down to 60-70 MBps. One drawback is that the power bank and the Wi-Fi streaming features cannot be used simultaneously but it's a price you have to pay to ensure the proper functioning of the Wi-Fi feature. The device comes pre-loaded with ADATA's HDDtoGO which has backup and encryption abilities. Moreover, in order to stream data to mobile devices they've made apps available on the respective stores of Android and IOS.

This is an interesting device indeed and one that makes a lot of sense when you think about it. An all-in-one HDD, HotSpot and charger? Why wouldn't you want it? The price is a bit on the higher side, especially considering the storage on offer but then again, the features on offer are excellent too.

Mitbun Mobandas



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Specifications

Model: Air Elite 800; **Capacity:** 500 GB; **Interface:** USB 3.0 and WiFi 802.11n; **Powerbank capacity:** 5200 mAh; **Colour:** Black; **Dimensions:** 134 x 80 x 22 mm; **Warranty:** 1 Year

Contact

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Gigabyte GA-Z97X-UD5H-BK

The vanguard of the Z97 brigade has arrived

Intel came out with a processor refresh that includes 20 new SKUs and along with that they've introduced the Z97, H97 and the X99 chipsets. The Z97 in particular is aimed towards replacing the Z87 enthusiast segment maintaining overclocking abilities and bringing with it a host of new technologies. These new chipsets still use the LGA1150 socket so you can use current gen Haswell as well as the soon to be introduced Broadwell processors. The Gigabyte Z97-UD5H-BK is the first Z97 board that we've had the pleasure of testing. The colour scheme of this particular board happens to be black with golden accents. There is a little bit of grey here and there but the overall theme is dark with a matte black PCB to top it off.

This board has support for 3000 MHz RAM through overclocking as is the case with premium boards – kids, now you know that you're playing at the playground where the big boys come to play. The new chipsets also bring support for RAID on all SATA 3 ports so you can now have enterprise class transfer speeds using simple desktop SSDs. Another thing that has been made official on the Z97 chipset is support for SATA Express and the M.2 slot. Both of them use the same bus which is a combination of SATA and PCIE to increase the overall bandwidth available. This means that both ports cannot be used at the same time and since the SATA Express port makes use of two normal SATA ports, it also makes them unavailable. So you can either use the two SATA ports or use the SATA Express port or use the M.2 port. The M.2 port is placed such that it isn't going to be overshadowed by any PCIE card and there will always be a good amount of incidental air-flow over it. Over the last year we've seen most SSDs nearing the 600MBps limit on SATA3 slots so the SATA Express being made part of the chipset is a boon that has come at the right time.

The placement of the VRM heatsinks does make room for big coolers whose fins are at least 25mm from the surface of the board. The POST LEDs are placed awkwardly, if the USB 3.0 header right next to it were to be populated then it will hide the display which negates the purpose of the feature. All the switches have been placed together which is more convenient for benchmarking in an open-air configuration. There is a multitude of PCIE slots and PCI slots which have been made possible



due to multiplexing. This board uses Asmedia's ASM1480 for enabling this many slots. There are three physical PCIE x16 slots of which one is wired for x16 while the other two have been wired for x8 and x4 bandwidth. This means that you can have a three-way CrossFire setup or a two-way SLI setup since SLI require a bare minimum of x8 bandwidth per card. Not bad, eh?

The audio is enabled by an Realtek ALC1150 and the section of the motherboard that has this audio chipset seems to be pretty isolated from the rest of the board to ensure as less interference as possible – which is a good move by the designers. The board uses Intel's Gigabit Ethernet and Killer E2201 to give you two gigabit ethernet port but teaming is not supported on these two ports. Also, it's a welcome change to see more USB 3.0 ports on the back compared to USB 2.0 though they haven't done away with USB 2.0 completely and won't do so in the near future.

This is a Black Edition motherboard which means it is aimed towards the higher mid-range segment of users. Each board comes with a certificate attesting to the fact that these boards have been stress tested continuously for an entire week. Another thing we'd like to point out is that these boards come with sleeved SATA cables which look the same as most sleeved power supply cables, something that enthusiast builders have to manually make. Moreover, these come with a five year warranty to sweeten the deal.

Mithun Mobandas



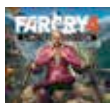
Features 62
Build 75

Specifications

Chipset: Intel Z97; **Memory support:** 4x3000(OC)MHz upto 32GB; **LAN:** Killer E2201 Gigabit Ethernet; **Audio:** ALC1150 7.1; **SATA:** 8x SATA III; **Expansion:** PCIE x16, 2x PCIE X16(x8+x4); **Dimensions (LxWxD):** 305 mm x 244 mm; **Warranty:** 3 years

Contact

GIGABYTE Technology (India) Pvt. Ltd.
Phone: 022-40633222
Email: sales@gigabyte.in
Website: www.gigabyte.in



FarCry 4

Come this fall and we'll have ourselves another chapter of FarCry with the storyline taking place in the Himalayas. <http://dgit.in/NearCry4>



Use VLC like a pro

Learn how to get the most out of VLC Media Player with this guide: <http://dgit.in/VeeYelCee>

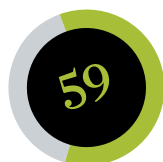
Edifier M1386

Elegant, compact multimedia speaker



Price
₹3,490

The first thing you'll notice about the Edifier M1386 is its size. The subwoofer isn't one of those massive boxes which you invariably end up using as a footstool. The satellites are not that small but well designed and aesthetically pleasing. The driver is housed in a suspended stand-based design with faux-chrome accents running along the bottom edge. Good looks overall, no chinks.



Features	65
Performance.....	55
Build quality	55
Value for money	60

Specifications

Output power: 8W x 2 satellites + 14W subwoofer (RMS); **Driver size:** 2.75-inch satellites, 5-inch subwoofer; **Frequency response:** 140 Hz - 20 KHz satellites, 50 Hz - 130 KHz subwoofer; **Dimension:** **Subwoofer:** 120x151x125 mm, **Satellite:** 164x200x280 mm

Contact

Compuage Infocom
Phone: 18002098980
Email: sagar.abraham@compuageindia.com

The speaker is fairly feature rich. It supports multiple sources including USB and SD Card and unlike most speakers in this price range the ports aren't located on the hard-to-reach back panel of the woofer, instead they're located on the wired remote pod. The pod has buttons for volume, playback, muting and input source toggle. It even has a tiny LCD screen which is a neat little addition. The speaker has built in FM radio but the reception wasn't great – much less compared to the F&D A530U.

The speaker isn't very loud – not surprising considering its small footprint and 30W RMS rating – but it's enough for a mid size room. The sound doesn't distort even when you push it past the 80 percent volume mark. Even at high volume the crossover unit seems to be sending the right frequencies to the tweeter and woofer. The clarity and overall performance didn't make us sit up and take notice but it fits squarely between the Umax Boombastic USP 3200 and the F&D F680, which is precisely where it's priced. A good value for money option for those looking for 2.1 speakers.

Siddharth Parwatay

ASRock Z97 Extreme6

It would be accurate to call this board a peripheral junction

ASRock's entrant onto the Z97 scene has something that we've not seen on the other Z97 boards so far and that's the Ultra M.2 slot. While other boards used PCIE 2.0 to get 10 Gbps on the M.2 slot, ASRock has used PCIE 3.0 to increase the bandwidth to 32Gbps. Moreover, they've even made space for a Mini PCIE slot which sits below the M.2 slot. So we can say that they've made an efficient use of real estate.

ASRock has departed from the earlier colour scheme of black and gold. On the Z97 Extreme6 we get to see a new black and blue scheme with tall VRM heat sinks. All the capacitors on the board aren't



Price
₹14,995

solid state and this might seem to be a drawback at first glance.

However, these turned out to be premium Nichicon capacitors which cater to the audio codec. Not to mention, this board too has an isolated section which has become more and more common as of now.

A new feature that this board comes with is the ability to power two SATA devices (HDD or ODD) via the motherboard instead of the PSU. This way these two devices can be turned off at anytime to save power which is something you can do through your OS as well but that never shuts down power completely. Two other things that stand out are the presence of two USB 3.0 headers and a Thunderbolt AIC connector. The board does not have PCI slots or v-check points but it makes up for those by incorporating features like Thunderbolt AIC and Ultra M.2.



Features	68
Build	75

Specifications

Chipset: Intel Z97; **Memory support:** 4x3200(OC)MHz upto 32GB; **LAN:** Realtek 8111GR and Intel Gigabit Ethernet; **Audio:** ALC1150 7.1; **SATA:** 10x SATA III; **Expansion:** PCIe x16, 2x PCIe X16(x8+x4); **Dimensions (LxWxD):** 305 mm x 244 mm; **Warranty:** 3 years

Contact

Mediaman Infotech
Phone: 022 - 43441111
Email: sales@mediaman.co.in
Website: <http://www.mediaman.co.in>

Mithun Mobandas



Dark Souls II graphics analysis
Can't have enough of the new Dark Souls? Check out this game analysis where the game's low, medium and high settings are compared. <http://dgit.in/GAnalysis>



Galaxy Note 4
Reports suggest that the Samsung Galaxy Note 4 will launch before IFA on September 3. <http://dgit.in/Note4>

Bazaar

Motorola Moto E

Hello 'affordable' Moto! Just how good is this new beauty?

It seems that Motorola is on its toes, especially in the Indian market. After getting huge success with the Moto G and the Moto X, the company recently made a global announcement of its most affordable smartphone in India called the Moto E. With this, Motorola now has three smartphones selling in three different price brackets.

Now being offered under the Rs.10,000 price budget, the Moto E isn't a showstopper but it is definitely one of the most sturdy looking handsets you can get on such a tight budget. It looks quite similar to the Moto G and feels a bit bulky which adds to the sturdiness of the smartphone. Just like its elder brothers, the back panel of the Moto E is changeable and you can buy from a variety of options available online.

The Moto E offers a 4.3-inch display with a 540p resolution protected with Gorilla Glass 3. You also get features like 4GB of expandable memory, a 5MP fixed focus camera, a 1.2GHz dual-core Snapdragon 200 processor, 1GB of RAM, and the latest Android 4.4.2 KitKat update. In the performance segment the SoC performed quite well as the benchmark scores showed that the Moto E is no slowpoke. Everyday activity on the smartphone is pretty slick and the OS feels robust. Graphics intensive tasks like gaming and video playback is surprisingly smooth although there were minor instances where we saw the handset stutter a bit.

We were also impressed by the battery backup as our standard battery tests showed that the Moto E's 1980mAh battery to be quite good, for its price.

As you all know, we first charge the smartphone to a full 100% and then run a Full-HD video for one hour to determine the amount of battery loss.

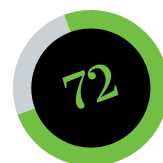
The results clearly prove that the battery on the Moto E provides the best battery backup in its category, and furthermore, it even beats its elder brother, Moto G. The smartphone didn't impress a lot in the benchmark performance tests but the battery backup is way better than its competition.

To conclude our assessment of this category defining phone, in terms of overall performance and build quality the Moto E is well worth the money. The only thing that disappointed us was the fixed focusing system on the camera which results in horrible looking out of focus pictures. All good otherwise.

Kunal Khullar



Price
₹6,990



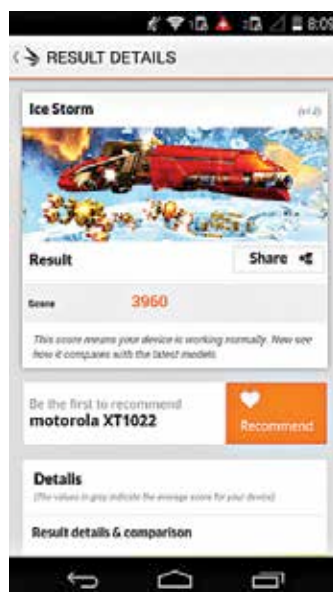
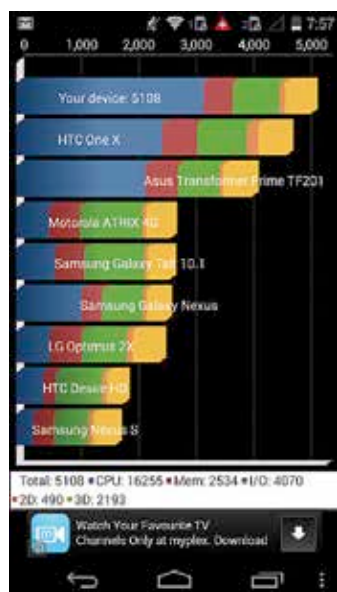
Features..... 70
Performance..... 68
Value 75
Design 75

Specifications

Display: 4.3 inches 960x540 resolution (256ppi); **Battery:** 1980mAh; **Storage:** 4GB, expandable via microSD card; **Camera:** 5MP fixed-focus; **SoC:** Snapdragon 200; **CPU:** 1.2GHz dual-core; **GPU:** Adreno 302; **RAM:** 1GB; **Operating system:** Android 4.4.2; **Connectivity:** 3G, W-Fi, Bluetooth

Contact

Motorola India
Phone: 1800-302-2344
Website: in.motorola.com



Net Neutrality

Read this to know how much support does Net Neutrality actually have. Join the cause if you support it too. <http://dgit.in/NetNHP>



Nvidia Jetson TK1

Nvidia showed up at the yearly Maker Faire for PC modders and showed off their Jetson TK1 software dev kit. <http://dgit.in/JetsonTK1>

F&D A530U

A plain vanilla 2.1 speaker set with a few additional features

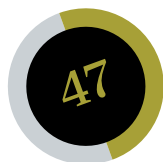


Price
₹4,990

We've seen a few decent speakers from F&D in the past like the W330 BT and the almost legendary F680, but not all of their models make too much sense. The A530U is sadly one of them. Like anything that comes with a PMPO label on it, we looked at it with a certain amount of skepticism. The 2.1 speaker set comes with a host of features – FM,

IR remote, and a USB/SD card reader slot that can read MP3s, but in terms of performance it isn't much different from the F&D A511 we tested about a year ago. In fact it has almost the same specs. The satellites look a little different but you'd be forgiven to think it's the same subwoofer on both units (in fact it might just be). Performance-wise bass heavy numbers will sound decent but there isn't much else to write home about in terms of clarity. The FM function too while being present didn't perform very well. Admittedly, our office is particularly bad for FM reception but extending the antenna didn't help either. The A511 now costs Rs. 2,990 while the speaker under review at the moment – the A530U – comes at a price tag of Rs. 4,990. So is the 2k price difference worth it? In one word – no. Stretch your budget a little and check out F&D's own F680 or the older A511 if these "features" aren't of much use to you. If looks are important to you along with performance, the Edifier M1386 being reviewed this month is a better option as well.

Siddharth Parwatay



Features	60
Performance.....	45
Build quality	45
Value for money	40

Specifications

Output power: 16W x 2 satellites + 20W subwoofer (RMS); **Driver size:** 3-inch satellites, 6.5-inch subwoofer; **Frequency response:** 95 Hz - 20 KHz satellites, 35 Hz - 130 KHz subwoofer; **Dimension:** Subwoofer: 252x269x252 mm, Satellite: 88x91x187 mm

Contact

Fenda India
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Website: www.fendaudio.com

TAG USB 007 Gaming Mouse

A very good mouse for its price

A decent mouse that is well balanced in every usage scenario is hard to come

by that too for cheap. Some people fueled by a misconception that "gaming mice are usually very costly", end up spending a lot of money for the kind of mice that they don't actually need. There are gaming mice available for cheap too and TAG known for their low priced products have sent us their Pro Series USB 007 gaming mouse for review. Taking a quick look at the design of the mouse, you'll notice that TAG has made sure that the mouse looks something out-of-the-ordinary. Though the body is matte black, the front part of the mouse has an animal-skin like textured pattern in Red and Black. This texture is a blend of rubber and plastic which adds grip to the mouse



Price
₹700

while also looking good. The 007 has an ergonomic design to provide support to your fingers at the sides. Out of the six buttons on the mouse, one button at the centre is for on-the-fly DPI switching and two buttons on the side are for performing backward and forward operations. The scroll wheel feels good to use but is a bit too cheap for our taste. The feet of the mouse are strictly okay and you shouldn't expect much glide from them. While testing the 007, we found it to be pretty good for most regular tasks. As for gaming, the mouse tracked quite well in FPS games and was accurate. In terms of extra buttons, the 007 only has two on the sides and so this mouse isn't for MOBA players. The 007 also managed to be very accurate on most of our testing surfaces. At just ₹700, the TAG USB 007 is a very good entry level gaming mouse which has almost everything what a casual gamer on a budget needs. Gamers who have a habit of using top end laser mice should look elsewhere, this ain't a place for you.

Siddhant Sharma



Features	45
Build Quality	61
Value for money	77

Specifications

No. of buttons: 6; **Colour:** Red; **Sensor:** Optical; **DPI:** 800/1200/1600/2400 adjustable; **Cable:** 1.6 metre; **Warranty:** 1 year

Contact

Technology And Gadgets
Phone: 022-23823331
Website: <http://dgit.in/1kdKFHB>



Surface Pro 3 review

Dunno when it will launch in India. Watch this video review of the tablet instead: <http://dgit.in/1r3RoZ8>



RF + Google Glass

See what Roger Federer sees while playing Tennis at the court, thanks to Google Glass <http://dgit.in/1p4XAYj>

Bazaar



Features 66
Build 75

Specifications

Chipset: Intel Z97; **Memory support:** 4x3300(Oc)MHz upto 32GB; **LAN:** Killer E2205 Gigabit Ethernet; **Audio:** ALC1150 7.1; **SATA:** 8x SATA III; **Expansion:** PCIe x16, 2x PCIe X16(x8+x4); **Dimensions (LxWxD):** 305 mm x 244 mm; **Warranty:** 3 years

Contact

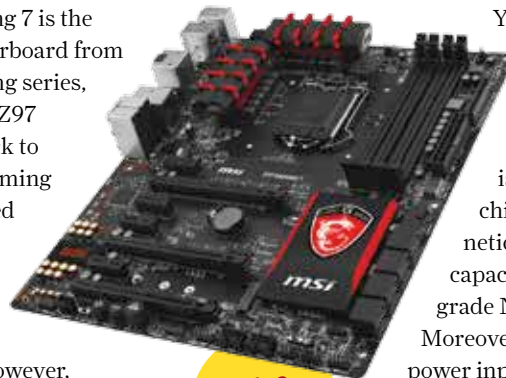
Acro Engineering Company
Phone: 11-40525645
Email: saini@amigointernational.biz
Website: <http://www.acrotechindia.com>

MSI Z97 Gaming 7

Worthy addition to MSI's gaming series but lacks SATA Express

The MSI Z97 Gaming 7 is the second best motherboard from MSI in their gaming series, the flagship being Z97 Gaming 9 AC. MSI has stuck to its colour scheme for the gaming series with black punctuated with metallic red accents. The VRM heat sink being 32mm tall are a bit higher than the other Z97 boards we've tested. However, this shouldn't be a problem with good CPU coolers since they are generally designed with enough clearance from the base.

The board comes with OC Genie which is a one button overclocking system and has been found to be better than similar solutions from competitors. While the board does have an M.2 port, it doesn't have a SATA Express slot which every other Z97 board we've looked at so far has sported.



Price
₹16,500
(+Tax)

You'll never lack USB ports with this motherboard as it has 10 ports on the rear of which 8 are USB 3.0. Even this board has an isolated section for the audio chipset to reduce electromagnetic interference. Even the capacitors in this section are high-grade Nichicon gold capacitors. Moreover, it has a separate three-pin power input socket for isolating power from the motherboard.

The board makes use of Asmedia's multiplexer chips to provide for more PCIE x1 slots. The third PCIE slot may be wired for x8 bandwidth but it only supports x4. We only see one reason why an enthusiast might forego this board for another and that is the absence of the SATA Express port.

Mithun Mobandas

Seagate Backup Plus Fast 4TB

An external with speeds akin to internal drives

When you first look at the drive it seems a little too fat for a normal portable hard drive. And no, it isn't one of the extra rugged models with plenty of padding. This thickness is due to two 2 TB drives in the device. Moreover, they are configured in RAID 0 configuration. So you need to be extra careful with this drive since losing one drive will lead to all data being useless. In our data transfer tests this drive clocked about 170-226 MBps. Surprisingly, intra drive transfer speeds weren't as fast.

With a whopping 4 TB of data capacity this drive is something that we've all been waiting for – with an ever-increasing data pile, and an insatiable thirst for hard drives, no wonder, right? Most externals only manage approximately half of what this drive does

and those which do have better speeds than the rest aren't truly portable since they require you to use an external power adaptor.

The two hard drives inside happen to be Samsung Spinpoint M9T 2TB drives which run at 5400 RPM and sport 32 MB of cache memory. The RAID configuration is hardwired so you can't change that to RAID 1 or anything else. The drive comes with Seagate's Dashboard pre-loaded onto it but unlike the GoFlex series, this one doesn't come with any cloud storage of its own but you can use your existing account if you have made one in the past. This is quite surprising since you'd expect more from a device that has been priced at ₹25,000. But the prime focus here is on speed and this drive delivers way better speeds than the competition.

Mithun Mobandas



Price
₹25,000



Performance 65
Features 40

Specifications

Model: STDA4000300;
Capacity: 4 TB; **Interface:** USB 3.0; **Colour:** Black;
Dimensions: 116.9 x 82.50 x 22.35 mm; **Warranty:** 3 Years

Contact

Fortune Marketing
Phone: 011 - 2641 4468
Email: Sales@fortune-it.com
Website: seagate.com



No protests allowed

GoDaddy and the Dept. of Homeland Security, Mexican Branch shut down a mexican protest site 1dmx.org. <http://dgit.in/NoFreedom>



ZBOX Sphere

ZOTAC recently pulled the wraps off its ZBOX Sphere OI520 Mini PC which looks somewhat like the Nexus Q. <http://dgit.in/ZSphere>

Dell Precision M3800

A powerful workhorse with an elegant look



Workstation laptops or PCs are notorious to have an industrial, lacklustre look and feel to them. The Dell M3800 breaks that mould. It resembles an ultrabook, in terms of its size and dimensions, and has an appealing brushed metal screen lid which feels premium on touch. The machine is built and constructed well, overall, with solid hinges at the spine. We especially liked the fact that just over 2 cm

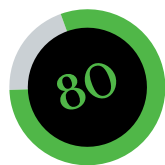
thick and weighing a bit over 2 kg, the Dell Precision M3800 doesn't belie its powerful hardware underneath – a remarkable achievement.

Its screen is nice and bright, and onboard speakers aren't bad for a quick multimedia session on the Precision M3800. It has a full keyboard with backlit keys, and the keys remind us of the Dell Adamo – very good key layout, nice feedback. No complaints with the touchpad either. We especially like the rubber material surrounding the keyboard and covering the plush palmrest, which makes for an extremely comfortable typing and handling experience with the Dell M3800.

Given its internal hardware, we aren't surprised that this machine is very powerful. It can do about anything you throw at it. However, all that does impact its battery life, which didn't even last the 2 hour mark in our tests.

Still this machine is highly recommended for all professionals who desire a mobile workstation (graphics artists, animators, video editors, designers, etc) which also doubles up on svelte looks.

Jayesh Shinde



Features	80
Performance.....	85
Design	85
Value	70

Specifications

Display: 15.6-inch, 1920x1080 res;
CPU: Intel Core i7-4720HQ @ 2.2 GHz;
RAM: 8GB DDR3 (1600MHz); **HDD:** 512GB SSD; **GPU:** NVIDIA Quadro K1100M + Intel HD Graphics 4600

Contact

Dell India
Phone: 1800 425 4026
Email: NA
Website: dell.co.in

Transcend MP350

Cheap and efficient

Most PMPs have gone the way of the VHS and audio cassette, long forgotten and archaic delivery mechanisms for that music fix you've been yearning for. A few still stick around, not in the spotlight, but they do hover around in the background providing solace to a few yearning souls. The Transcend MP350 is one such device.

A very bare-bones PMP that's tiny, rugged, boasts of decent sound quality and a monochrome OLED screen. This simple little device might not seem to offer much, but what little it does offer is enough for a person who's looking for a simple music player for everyday use. It's a device that doesn't need mollycoddling and screen-guards and all that other fluff to keep the rest of your delicate gadgets alive and shiny.



The device is made from what seems to be a sort of rubberised plastic. Sheath over the screen itself is not very well made however and we managed to get it thoroughly scratched within a few weeks. That said, the beauty of this device is that you really don't care so much if it's scratched.

You get enough control buttons – a play/pause button, volume control switches and a lock and screen switching button and even a set of buttons for switching between tracks and controlling the flow of music. The mic is located on the side and a mini-USB port on the other side.

We like the fact that the clip is large and sturdy, and also the fact that being an OLED screen, the text is still very readable despite the small size, and the addition of a radio was definitely not remiss.

If all you want is a source of music that is not your phone, take a peek at the Transcend MP350. It's cheaper and more functional than an iPod Shuffle and sounds decent, making it the perfect companion for a workout or long commute where the audiophile quality is less of a priority.

Anirudh Regidi



Build Quality	75
Performance.....	65
Value for money.....	75
Accessories	50

Specifications

Capacity: 8GB; **Dimensions:** 67x26.5x18.3mm; **Display:** 1" monochrome LCD; **Formats supported:** MP3, WMA, WAV; **Battery life:** 16hrs

Contact

Transcend Information Inc.
Website: <http://in.transcend-info.com/>



No more tears

Scientists have figured out a way to prevent a bacterial infection from forming. <http://dgit.in/1vWTN85>



300% faster SSD

Researchers at a Japanese university have created an algorithm that will make current SSDs 300% faster. <http://dgit.in/1IS23w>

Bazaar



MSI Nightblade

It's barebones but not a "gaming system"

Features 72
Build 76

Specifications

Chipset: Intel Z87; **Memory support:** 4x3000(OC)MHz upto 16GB; **LAN:** Killer E2200 Gigabit Ethernet; **Wi-Fi:** Intel 7260 802.11ac; **Audio:** ALC1150 7.1; **SATA:** 5x SATA III; **Expansion:** PCIe x16; **PSU wattage:** 600W; **Dimensions (LxW):** 345.8 mm x 277.3 x 175.7 mm; **Warranty:** 3 years

Contact

Acro Engineering Company
Phone: 11-40525645
Email: saini@amigointernational.biz
Website: <http://www.acrotechindia.com>

MSI recently launched the Nightblade, a barebones system that consists of a cabinet, a high end motherboard and a 600W PSU. Nightblade follows the same colour scheme as MSI's gaming series of graphics cards and motherboards. At the heart of the SKU that we received was the MSI Z78 I Gaming AC motherboard, a rather feature rich board. The cabinet is quite small and is well built with most components coming together in close proximity. There are dust filters on almost all intake orifices and the entire setup is cooled by a small 92 mm fan mounted on the rear. Moreover, the power supply is rated for 600W at 80 Plus Gold efficiency. With a depth



Price
₹31,500
(+Tax)

of 345.8mm this machine can easily accommodate GPUs that are 290mm long and the fan intake is from the underside of the case which in turn remains elevated slightly thanks to a case handle.

The front panel has four USB ports (two are USB 3.0), audio line in/out and also an OC Genie button which is MSI's overclocking system of

sorts. You also get a PCB that can house two mini-PCIE slots for SSDs which are to be set in RAID for the boot drive. This system seems to be aimed towards enabling end-users to better utilise the different features of the motherboard that one would normally take for granted.

Mithun Mobandas

WD Black² Dual Drive

A unique package with a hard drive's capacity and an SSD's speed

If you've got a laptop and have ever experienced the speeds that an SSD only provides then you've probably cursed at yourself for not buying that expensive laptop with multiple storage bays. Any way you look at it, you can't have speed and capacity without spending an awful amount of money. This is where WD's Black² Dual Drive comes into the picture. It has a 120 GB SSD coupled with a 1 TB hard disk drive. You need to install WD's software which comes with the drive in order to access the SSD and the HDD, otherwise you'll be stuck with the HDD only and have no control over which software gets to go where (we're talking between the SSD and the HDD).

The drive comes with a USB key that points you to the specific page for the drive software and also for a copy

of Acronis True Image in order to clone your drive. Moreover, they've got you covered with a SATA-to-USB 3.0 adaptor which helps during the cloning process. Though in this configuration you could use the drive as a portable hard drive, we

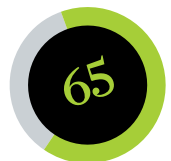
don't recommend doing so since the top portion of the drive is actually the SSD and the PCB can easily get damaged. We averaged about 395 MBps on the SSD while the HDD allowed for 138 MBps transfer speed.

It's an unusual combination of hardware that can actually work out to be surprisingly good in certain situations. Given that an SSD and a HDD of similar capacity ends up costing about ₹11,000, this is a good deal at its price and worth it if you can afford it.



Price
₹22,500

Mithun Mobandas



Performance..... 80
Value 55
Build 60

Specifications

Model: WD1001X06XDTL; **Capacity:** 1 TB HDD + 120 GB SSD; **Interface:** USB 3.0 / SATA 6 Gbps; **Colour:** Black; **Dimensions:** 116.9 x 82.50 x 22.35 mm; **Warranty:** 5 Years

Contact

Western Digital
Phone: (011) 65151104
Website: www.wd.com

Every eBay account hacked

eBay has admitted that hackers got away with their entire database of information on their 233million users. <http://dgit.in/1t5E8yM>

**Virtual War**

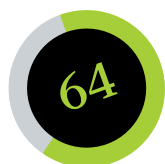
The Oculus Rift is being put through its paces as a weapon for the military. <http://dgit.in/1vWWQnj>

Lenovo IdeaPad A10

An affordable, Android convertible



The Lenovo IdeaPad A10 is a budget 10-inch laptop. Calling this a laptop is a very liberal interpretation of the word though, so don't confuse it to with a full-fledged Windows-enabled machine. The A10 runs on Android 4.2, and therein lies its make or break factor.



Features	60
Performance.....	55
Design	75
Value	65

Specifications

Display: 10.1-in IPS touchscreen (1366×768); **CPU:** 1.6GHz quad-core Rockchip RK3188 Cortex-A9 processor; **RAM:** 1GB; **Storage:** 16GB internal memory, microSD up to 64GB; **Other features:** VGA webcam, mini-HDMI, 2xUSB 3.0, microUSB ports; **Wireless:** Wi-Fi 802.11 b/g/n, Bluetooth 4.0; **Battery:** 4400mAh; **OS:** Android 4.2 Jelly Bean with Lenovo skin

Contact

Lenovo India
Phone: 1800 3000 9990
Email: NA
Website: lenovo.com/in

The machine doesn't feel like a cheap unit, despite the fact that its plastic is clunky, simply because of its rotating hinge which allows the A10's screen to morph into a tablet with the keyboard as its stand. In this mode the machine behaves like any other Android tablet. The 10-point multitouch IPS screen is snappy and good to use.

It's in the traditional laptop mode where one has to prepare for compromises. If you've been using Windows all your life. Android is still hamstrung in giving you the same experience that Windows (or even Linux) provides. We do however salute Lenovo for modifying the A10's keyboard to include Android-centric keys on it – Home, Back, Options, Search, and more – to ease you into the operating environment. Overall, the machine's performance is just about average in our tests.

Unless you're only using cloud apps and are game to try Android as your only operating environment, the A10 is a good starting point. Hey, you can also view it as a tablet with a dedicated keyboard.

Jayesh Shinde

BenQ BL3200PT

Size is everything

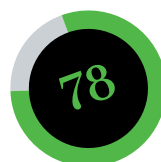


Large monitors can be a boon or a bane depending on the quality of the product you pick. The larger the panel, the more you need to worry about resolution dead pixels, power consumption and heat, the quality of the stand and more. Thankfully, with BenQ's 32" offering, the BL3200PT, there's nary a thing that you

need worry about.

The monitor sports a resolution of 2560x1440 (4k would have been so much better though) and is very well-built. The hinges and stand are nice and sturdy and the panel itself boasts of excellent colour reproduction and quality.

Our tests place this monitor at the top of our monitor test charts. This being a VA panel, the monitor boasts of a contrast ratio in excess of 950:1, which is exceptional, but also expected considering the type of panel. We did notice a degree of backlight bleed at the corners and the somewhat low refresh rate, but this is understandable given the size and nature of the panel and it's never so bad that you'll really complain. The price is definitely one to give pause, but we're yet to encounter a better monitor at any size. If you need a massive monitor, wait a bit and get a 4K ready one or just get yourself one of these.



Features	91
Performance.....	82
Value for money.....	60

Specifications

Panel Size: 32"; **Resolution:** 2560x1440; **Brightness:** 300cd/m2; **Panel Type:** VA; **Response time:** 12ms; **Colour Gamut:** 100% sRGB; **Warranty:** 3 years

Contact

BenQ India Pvt. Ltd.
Phone: 1800-419-9979
E-mail: service-in@benq.com
Website: <http://www.benq.co.in>

Anirudh Regidi



Space Dragon

SpaceX is all set to unveil "Dragon", a ship to take astronauts to space.
<http://digit.in/1plROAC>



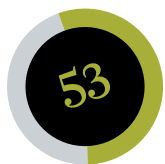
GCHQ Smashes keyboards

Britain's top security agency took the trouble to smash keyboard and mouse controller chips to secure data. Why?
<http://digit.in/1m5S2P9>

Bazaar

WD My Passport Slim

Slim drive, average performance



Performance..... 40

Features 65

Specifications

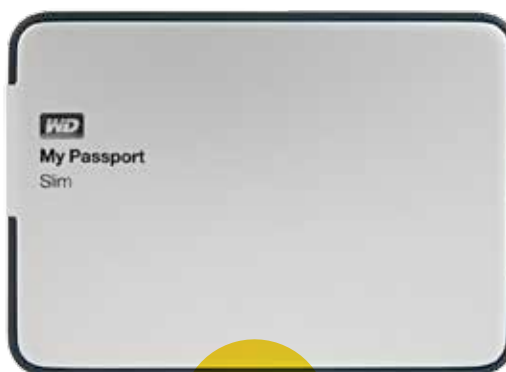
Model: DBGMT0010BAL;
Capacity: 1 TB HDD;
Interface: USB 3.0;
Colour: Silver + Gun metal;
Dimensions: 110 x 80 x 12.3 mm; **Warranty:** 3 Years

Contact

Western Digital
Phone: (011) 65151104
Website: www.wd.com

In a world where slim is considered to be just better we find a hard disk that's also jumped on that bandwagon, along with a myriad other drives from various other companies. We'll come to the performance later, but based simply on looks, we must say that this drive really does stand out. It's got a very appealing gun-metal finish that's topped off with a layer of aluminium and this pretty much sets this drive apart from its competition.

That said, the drive's performance is strictly average though. We managed an average transfer speed of 85-99 MBps for sequential files and 23-31



Price
₹6,999

average drive with strictly average performance and bundled features. The only thing that sets this drive apart from the competition is the metal finish and the slim form factor, which can also be acquired if you look around a bit. This is not a bad drive, but neither is it a great one.

MBps transfer rate for sequential files.

The drive is bundled with the usual assortment of backup software and other utilities, but they aren't really that much different from anything you'll find among the competition.

What we're saying is that this is a strictly

Mithun Mobandas

Amkette Evo TV Box

For your digital media consumption needs

The Evo TV box, with dimensions of 4.6 x 4.6 x 1 inches, can fit comfortably beside your TV. The front of the box has a remote sensor and a blue LED light. There is an SPDIF OUT port, an AV OUT port, HDMI OUT, an Ethernet port and the power input to connect the adapter. Both the MC and AC editions of the Evo TV feature Android 4.0.4 Ice Cream Sandwich operating systems with customised interface which looks quite good. It has 3xUSB 2.0 ports on the right side and another USB 3.0 port on the back.

The device can play videos all the way up to 1080p resolutions without any lag or stutter. It has subtitle support as well.

The Evo TV supports video-streaming through Android apps for YouTube. We faced issues while using external hard

disks as sometimes, the system didn't detect hard drives at all, even after a system restart. USB flash drives work much better. An LED on the top shows the battery status. The remote control is quite sluggish while using it to navigate through the interface.

With its meagre 1 GHz single-core ARM Cortex A7 processor and Mali 400 GPU, this device is not built for gaming.

You can enjoy some light games however.

The device does come with XBMC pre-loaded on it as well, though for some reason it wouldn't work for us. If you want a media centre for your TV which provides excellent TV streaming, then go for the Evo TV. Don't expect to do anything else on this device though, it doesn't have the grunt.

Mir Ubaid



Price
₹5,500



Features..... 60

Performance..... 55

Design 65

Value 60

Specifications

CPU: 1GHz ARM Cortex;
GPU: Mali 400; **Internal Storage:** 4GB; **OS:** Android 4.0.4;

Contact

Amkette India
Phone: 1800-11-9090
Email: info@amkette.com
Website: <http://www.amkette.com/>

Price watch

Are you on the lookout for a set of speakers to serve your aural needs? Here's what you need

**Space: The Final Frontier**

What will future spaceships look like? Here's what some scientists think:
<http://dgit.in/1t4NX08>

Do you need an AC?

We're talking about routers and not air conditioners. The latest Wi-Fi protocol revision offers a lot of benefits over the previous revision but does the average guy need them?

Agent 001

agent001@thinkdigit.com

Does it have AC Wi-Fi? Not a question one hears normally, not even when we're talking about phones. We get plenty of emails regarding routers and very few people are actually aware of this Wi-Fi protocol. Most of the queries are centered on compatibility with existing devices that people have. Then again, if you are going to invest in new hardware it better be worth the money right?. This brings to mind the adoption of the product. To put things into perspective let's take phones into consideration. At the time of writing this I've found 73 phones that are capable of Wi-Fi 802.11ac compared to 1577 phones that support 802.11n. Analyst predictions were around 8%

for the year 2014 while actual figures are roughly half that number. There are many laptops, phones, tablets, etc. that supports 802.11ac but most of these devices are from the premium segment, and even in that segment, it's hard to find support for ac (case in point, the iPad Air)

Moreover, we don't have services Netflix with all its glorious HD content that we'd be able to enjoy without ever seeing the "Buffering circle". So in the end, you don't have a lot of bandwidth for online content. When it comes to streaming locally, you're not really going to need the extra bandwidth that ac offers unless two or more people are streaming HD content at the same time.

Even in such a scenario, the element of juggad always exists. Not everyone has a penchant for viewing only uncompressed

full HD content and even if you do, the chances that there are two people connected to the same network that'd be streaming at the exact same time is miniscule. But let's say all of the above applies to your scenario, I'd say you're one of the very few people for whom a 802.11ac device is necessitated and by all means do buy a 802.11ac router with 1750-1900 Mbps bandwidth. The proponents for the tech-


nology claim an adoption of 45% by next year, a figure that we won't be seeing for at least two more years in reality.

If all of that wasn't convincing enough, then let's pull out the raw numbers.

Other than LAN data transfers, the only bandwidth intensive operation happens to be uncompressed HDMI video which needs twice the bandwidth that most 802.11ac devices can provide. Moreover, the people who can discern such a video stream from a slightly compressed stream of the same file is also a minority.

Enough about bandwidth, let's look at the other aspects of 802.11ac.

- 80 MHz channel bandwidth - More bandwidth
- MU-MIMO - Simultaneous connections are better serviced
- 256 QAM - More bandwidth
- Beam-forming - Better connectivity

Each of the above features are great but there isn't an urgent need for the same. It's not as if not having an 802.11ac is going to leave you bereft of an incredible experience or even cause the mildest inconvenience. All I'd say is, if your current router conked off and you had to buy a new one, then an 802.11ac router might be logical upgrade, albeit not a necessary one. But if your current router is working fine and you've bought a few 802.11ac enabled hardware, then you need not unnecessarily upgrade your router to get the "best experience". 

Application	Recommended bit rate
VoIP - voice transport	27 - 93 kbps (codec dependent)
VoIP - signaling (typically SIP)	5 kbps
Remote display	150 kbps (without video), 1.8 Mbps (with video)
Web conferencing	384 kbps - 1 Mbps
FaceTime	0.9 Mbps
AppleTV video streaming	2.5 - 8 Mbps
High-definition video (compressed)	2 - 5 Mbps
High-definition video (uncompressed)	20 Mbps
High-definition video (uncompressed HDMI)	3.3 Gbps
Standard-definition video	1 - 1.5 Mbps
Email/web browsing	0.5 - 1.0 Mbps
File sharing	5 Mbps
YouTube	0.9 Mbps
Network backup	More is better

Smart guns matter

A look at the interesting new tech behind smart guns and why they're increasingly inevitable: <http://dgit.in/1oo1Nun>



Hacker Army

Here's a sneak peak at China's infamous "Hacker Army": <http://dgit.in/1jNh3l4>

Agent 001

Much hardship

I want to buy a hard drive around ₹6,000 please help to choose the best one. I want more around the price it should have usb 3.0 and backup compatibility and space 1 TB or more I'm ready to buy from Flipkart or Amazon but help me to choose one the best one. Thank you.

—Bibek Dekka

A You haven't mentioned whether you want a portable or a plain external. Anyways, according to your budget you do have plenty of options. And when you say "best" there are a lot of features that come into play. If you want transfer speeds then there is the Seagate Backup Plus Fast which we've covered in the Bazaar section this month, but it's way out of your budget. Then, if you want a rugged drive that can take quite a beating (only when not powered) then you can check out ADATA's HD710 Dash Drive or Transcend's StoreJet 25M3. If you wish for



Motherboard madness

more capacity then for about ₹6,300 you can get WD Elements Portable 2TB which even has a backup software pre-loaded, as is the case with most external drives. You can always look towards other free software to take backups and not necessarily depend upon what the manufacturer gives you. There are plenty of such software available including CloneZilla, Easeus, Macrium Reflect etc., All the drives we've mentioned have USB 3.0 so you can take your pick.

Too many choices

Hey Digit, I am considering the rig that you all have provided last month on your website. <http://dgit.in/50KGaming>

I am just thinking about doing a minor change. Can i change the motherboard to ASUS M5A97 LE?? I have read reviews that it has compatibility issues with the fx 8320 and I have also heard that MSI's after sale service is not that good.

So, am I making the right decision??

Can i also go for the dell S2240L?? Or should I stick with your suggestions?

Anyways i don't know if you will reply this time but I am still very much grateful of you guys for posting that article. Hoping to get a reply from you soon.

—Hrshikeshdas Das

A You can choose whichever motherboard you wish to have as long as the CPU is supported by the board. The motherboard manufacturer will list out all the CPUs that are compatible with the said board. About this problem that you've read about, there can be plenty of issues but not all of them are linked directly to the motherboard.

However, we haven't tested this particular board so we can't really comment on the same. But by all means, you can pick any compatible board. As for the monitor, yes, the Dell S2240L is a good monitor as well. The difference is that the Dell has a glass panel in the front of the screen while the LG's screen has a matte finish. Whether you're fine with a glossy panel or not will determine your choice. Moreover, the LG monitor has a DVI connector while the Dell monitor doesn't, and that's more important. Lastly, the LG Monitor is cheaper than the Dell and we picked it since it allowed us to improve other hardware in the build. In the end however, the choice is still yours.

Old is not always gold

My computer has become obsolete so I would like to upgrade it. So I need not provide computer specs. I want a motherboard(probably of intel with 3 RAM slots), 1GB DDR3 SDRAM(4 to 8GB as I already have a 2GB RAM-probably corsair). For these two my budget is ₹8,000 to ₹11,000. Can I insert a 2GB and 4GB RAM simultaneously

on same motherboard, both DDR3 and can I remove the processor from old motherboard and insert in the new one.If not then please suggest one. Thank you.

—Anany Prakhara

A You should provide the computer specifications since there are plenty of parameters which we look at before answering your queries. In this very query you've asked us if you can use your old processor. The answer is both yes and no. If you were to buy a new motherboard



Your monitor should have plenty of connectivity options

with the same chipset as before then yes. If you were to buy a motherboard with a different chipset then no. Since you haven't mentioned the chipset you're using and with no mention of the CPU, we can't suggest components without making a few assumptions which may be windily inaccurate in these circumstances.

As for your query regarding mixing two modules of different capacities, yes, you can do so but the RAM with the higher frequency will be downclocked to match the lower frequency of the other module, if at all this is the scenario. You do find motherboards with three slots, but very few allow for such a configuration. Native triple channel support existed on the X58 chipset which has now hit it's EOL. Other boards in your budget will come with 4 RAM slots. Two of the modules will run in dual channel mode while one will function in single channel mode. There is the possibility of compatibility issues as well. We do apologise if the answer seems a bit vague, but please do take the trouble to post details about your hardware as we need all the information we can get.



Major Gmail redesign

A new Gmail design is in the works and it's nothing like Gmail as we've come to know
<http://dgit.in/1nao7YP>



\$7 OS on a USB stick

How do you ensure that billions of people join the rest of us in the digital age?
<http://dgit.in/TC1PVs>

SPEND SMART

Attaining audio nirvana will not be so hard with this collection of speakers of every type that you'll ever need for your home.



PORTABLE

Brand	Model	Configuration	Battery Type	Max Output (in Watts)	Chassis Material	Frequency Response	Price
Bose	SoundLink Mobile Speaker II	Stereo	Li-ion	NA	Metal + Plastic	NA	22,338
Bose	SoundLink Mini	Stereo	Li-ion	NA	Plastic	NA	16,200
Creative	D100	Stereo	AA	NA	Plastic	20-20,000 Hz	4,295
Creative	AirWave HD	Stereo	Li-ion	20 W	Metal + Plastic	NA	10,400
Divoom	OnBeat 200	Mono	Li-ion	8 W	Plastic + Metal	80-20,000 Hz	3,229
Edifier	Bric Connect	Stereo	AA	12 W	Plastic	40-20,000 Hz	6,500
Edifier	Extreme Connect	Stereo	Li-ion	4 W	Plastic	190-18,000 Hz	5,500
F&D	Swan	Mono	Li-ion	2 W	Plastic	60-20,000 Hz	2,400
HMDX	Jam Party	Stereo	Li-ion	NA	Plastic	NA	6,199
HMDX	Jam Plus	Mono	Li-ion	NA	Plastic + Metal	NA	3,649
HMDX	Jam Classic	Mono	Li-ion	NA	Plastic + Metal	NA	2,242
iBall	Xpresso	Stereo	Li-ion	2 W	Plastic	100-20,000 Hz	860
iBall	OPUS	Mono	Li-ion	4 W	Plastic	150-80,000 Hz	1,640
JBL	Micro II	Mono	Li-ion	3 W	Plastic	150-20,000 Hz	2,299
JBL	Flip	Stereo	Li-ion	10 W	Plastic	150-20,000 Hz	5,199
JBL	Pulse	Stereo	Li-ion	12 W	Plastic	100-20,000 Hz	8,999
JBL	Charge	Stereo	Li-ion	10 W	Plastic	150-20,000 Hz	8,299
JBL	Flip 2	Stereo	Li-ion	12 W	Plastic	100-20,000 Hz	5,849
Logitech UE	Boombox	Stereo	Li-ion	NA	Metal + Plastic	55 - 20,000 Hz	11,500
Logitech UE	Mobile Boombox	Stereo	Li-ion	NA	Plastic	150-18,000 Hz	3,759
SoundLogic MTV	Soundbox	Stereo	Li-ion	6 W	Plastic	NA	3,999
SoundLogic MTV	Twister	Mono	Li-ion	3 W	Silicone + Plastic	NA	2,999
Portronics	Pure Sound BT	Stereo	Li-ion	NA	Plastic	NA	2,150
Portronics	Drums	Stereo	Li-ion	2.5 W	Plastic + Metal	NA	2,999
Promate	AquaBox	Mono	Li-ion	3 W	Plastic + Rubber	100-15000 Hz	3,722
Sony	SRS-BTM8	Stereo	AA	4 W	Plastic	NA	5,390
iBall	UFO3	Mono	Li-ion	NA	Plastic	100-20,000 Hz	1,500
Umeko	Dynamo	Stereo	Li-ion	10 W	Plastic	NA	1,874
Zebtronics	NITRO	Stereo	Li-ion	5 W	Plastic	80-20,000 Hz	1,000
Zook	Air Drum ZB-BS100	Stereo	Li-ion	6 W	Plastic	60-20,000 Hz	2,000
Zook	Air Drum ZB-BS100	Stereo	Li-ion	6 W	Plastic	60-20,000 Hz	2,000

F2P games are stifling

An interesting analysis of how the free-to-play gaming model is constricting on mobile devices, hampering innovation <http://dgit.in/1jdpj7Z>



Police question drones

Mumbai Police are questioning the use of an unmanned drone that delivered pizzas in a test run: <http://dgit.in/dronepolice>

Price Watch



STEREO

Brand	Model	Configuration	Max Output (in Watts)	Chassis Material	Frequency Response	Price
Audioengine	A2	2.0 Channel	60 W	Metal	65-22,000 Hz	14,500
Audioengine	A5+ Bamboo	2.0 Channel	150 W	Wood	50-22,000 Hz	37,495
Circle	Aura	2.1 Channel	28 W	Plastic	NA	3,700
Circle	CT- 2.103	2.1 Channel	40 W	Plastic	55-20,000 Hz	2,449
Creative	SBS A120	2.1 Channel	9 W	Plastic	50-20,000 Hz	1,599
Creative	GigaWorks T20 Series II	2.0 Channel	28 W	Plastic	50-20,000 Hz	7,600
Creative	GigaWorks T40	2.0 Channel	28 W	Plastic	50-20,000 Hz	11,870
Creative	GigaWorks T3	2.1 Channel	NA	Plastic	30-20,000 Hz	14,999
Edifier	X220	2.1 Channel	22 W	Plastic	50-20,000 hZ	1,940
Edifier	M1385	2.1 Channel	28 W	NA	50-20,000 hZ	2,795
Edifier	P2060	2.1 Channel	30 W	Plastic	NA	2,629
F&D	U213A 2	2.0 Channel	3.6 W	Plastic	NA	451
F&D	V520 2	2.0 Channel	4 W	Plastic	40-20,000 Hz	699
F&D	F680	2.1 Channel	70 W	Plastic	20-20,000 Hz	4,200
F&D	V620 plus	2.0 Channel	4 W	Plastic	90-20,000 Hz	1,129
Genius	SW-T2.1 1800	2.1 Channel	50 W	Plastic	50-20,000 Hz	3,850
iBall	Tarang Lion	2.1 Channel	40 W	Wood	20-20,000 Hz	2,900
Intex	IT 2475 Beats	2.1 Channel	40 W	Plastic	20-20,000 Hz	2,390
JBL	Creature III	2.1 Channel	20 W	Plastic	50-50,000 Hz	2,599
Klipsch	ProMedia	2.1 Channel	200 W	Fibre	31-20,000 Hz	12,490
Logitech	Z313	2.1 Channel	25 W	Plastic	NA	2,500
Logitech	Z623	2.1 Channel	200 W	NA	NA	9,995
Mitashi	HT 44 FUR	2.1 Channel	36 W	Plastic	50-20,000 Hz	2,390
Sony	SRS-D9	2.1 Channel	60 W	NA	50-20,000 Hz	5,430
Zebronics	SW3200RUCF	2.1 Channel	44 W	Plastic	20-20,000 Hz	2,500



SURROUND

Brand	Model	Configuration	Max Output (in Watts)	Chassis Material	Frequency Response	Price
Creative	Inspire T6160	5.1 Channel	50 W	Plastic	40-20,000 Hz	4,999
Edifier	Multimedia M3500	5.1 Channel	64 W	Wood	NA	6,980
F&D	F3000U	5.1 Channel	79 W	Wood	20-20,000 Hz	4,750
Genius	SW - HF6000	5.1 Channel	200 W	Wood	40-20,000 Hz	16,500
JBL	BD300	5.1 Channel	300 W	NA	35-15,000 Hz	40,900
Mitashi	HT 90 FU	5.1 Channel	70 W	Wood	40-20,000 Hz	4,350
Zebronics	ZEB-SWT9100RUCF	5.1 Channel	NA	Wood	20-20,000 Hz	9,989
iBall	Booster	5.1 Channel	120 W	Wood	20-20,000 Hz	6,875
Intex	5850 SUF	5.1 Channel	80 W	Wood	20-20,000 Hz	5,320
Logitech	Z906	5.1 Channel	500 W	NA	35-20,000 Hz	24,900
Philips	DSP 56U	5.1 Channel	75 W	Wood	20-20,000 Hz	5,999

Community

Follow our thriving communities on facebook, twitter and our forum and you just might get featured here



History of Ramen

Ever wanted to know how Top Ramen came to be?
<http://dgit.in/1nDyzGC>

The Unluckiest People

There are always those days when you sit and curse the creator (or whatever else you believe in) for giving you such a bad day. Take heart from these unlucky souls who've survived and struggled through a most improbable streak of bad luck.

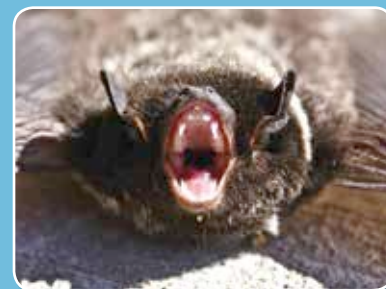


Calamity John

A man who fell of a horse and then got run over by a delivery man, a man who fell off a tree, broke his arm and then broke it again when returning from hospital on Friday the 13th, a man who later fell down a manhole and broke his leg and injured both knees. Calling such a man unlucky is an understatement. But he's still smiling, and that's admirable.

Lightning doesn't strike...

...the same place twice. Or so you're taught as a child. But what about the same person? When a bolt of lightning strikes you, your body experiences temperatures in excess of 50,000°C, loss of consciousness and capillaries under your skin rupture. Now imagine facing that very same bolt but seven times. You'd have to be Roy Sullivan to be that unlucky.



Calamity Jeanne

1967: Fell overboard from the deck of a ship, picked up an hour later; 1971: struck by lightning and suffers nerve damage; 1973: struck by lightning again; 1981: strangled by husband. Jeanne Rogers might already be considered unlucky, but then she was later mugged, had a bat rip her hair out and "accidentally" pulled off a celebrity's shorts. Whew! What a life!



You're a millionaire.....NOT!

What if everyone you knew suddenly became a millionaire? What if you found out that you aren't a millionaire because you were accidentally ignored? Well, that's what happened to Costis Mitsotakis, a Greek filmmaker who was somehow missed when the lottery tickets were being passed out. Tickets that won everyone in his village \$950 million.

Thrice drowned

When the ship you're on sinks, you're unlucky. When the next ship you're on sinks, you're twice as unlucky. When the ship after that sinks, you're just plain bad news. When one of those ships is the Titanic, the other the largest civilian liner of it's time and the last one a hospital ship, you're either Violet Jessop or among the unluckiest people alive.



Everything has a price

If you believe that winning a \$16million lottery will give you peace and happiness, you'd be utterly wrong. William Post won \$16million, paid a third to a girlfriend who sued him, loaned some of the money to a brother who never returned it, spent some time in jail for firing a shotgun at a collection agent and died with a \$1million debt while surviving on food stamps.

Virtual human being built

A group of academics and doctors are building a virtual patient's body from critical data <http://dgit.in/virtualhuman>



Facelessbook

Ever wondered what your facebook homepage will look like without a news feed? Head over to this link for more info <http://dgit.in/1nl7ag0>

Unwind

How we unwind



A label for everything

We do test printers but we're rarely excited to test them. But a label printer? That's something special! No sooner did the device enter our office than we went around labelling everything in sight. Nothing was spared, unprotected backs, tables, chairs and even HDDs. In fact, we even noticed a twinkle in the eye of our TC Elf!

Internet Antakshari

We've got a whole pile of speakers laying about our office and when everyone is a music aficionado, a kind of madness ensues. Vijay, Jayesh, Robert and Sid spent many an evening in an Internet Antakshari of sorts, fighting to play the next song as the last one died out. Real fun.



Arabian nights

We're aware that cats run the Internet, but for a change, we rediscovered the joys of viewing the misadventures of filthy rich Arabs going about their daily lives and getting pranked, and firing guns, and falling off treadmills, and falling off bikes, and blowing fire-crackers in, ahem, risqué, orifices.

digit DIARY

Building India's fastest PC was a dream that we've been nurturing for nigh on six months. Gathering together the necessary components was a logistical nightmare and when you live in a place where almost all good things need to be imported, it's a really herculean task. Finally though, we succeeded. Our sincere apologies to OCZ; they very kindly lent us their Z-Drive R4, but the only way they could get it back was by wresting it from our unrelenting fingers by sheer brute force (a drive with a transfer-rate of over 2Gbps will do that to a geek).

We got the Ant over for another spell at our office, primarily for the assembly of this awesome rig and my, the trials and tribulations we've had to endure to get that rig up and running were not for the meek. Our very first run saw smoke pouring out of the cabinet and with ₹16,00,000 of gear inside, you can just imagine how fast we turned that PC off. Mithun probably sprained a shoulder and the amount of perspiration that was pouring down our faces would have been enough to mop the office floor with (it's actually not that big an office). Weeks of tweaking, testing and optimization later, we finally have a PC of our dreams and the effort was well worth it. Just listening to the hum of those massive intake fans is a therapeutic experience. Ant's summarized the whole story in here so don't forget to take a gander at it.

An anniversary issue is not one that we take lightly, it's an issue that culminates in a mad rush that would normally have us falling over each other as we desperately scurry about trying to get stuff done, staring bleary-eyed at computer screens till our eyes water and falling asleep at the keyboard as a long line of gibberish fills the screen (yeah, we're not

those smooth, suave and sexy geeks you imagine of us to be). Strangely enough, that wasn't the case this month. Both Vijay (the true back-bone of digit) and Big Daddy were in full form, tag-teaming to alternately harangue and motivate everyone with their wise-cracks. The issue would not have been done without them. In the entertainment department the Pony outdid himself as well. His almost-a-deep-baritone voice (think of the Barely Air pilots- <http://dgit.in/1nlfGtI>) muttering an irritated "nahin re" and "chill duuude" every now and then caught on so fast that nobody says "no" anymore.

Bad colds laying low half the team, foreign trips, midnight ice-creams and colloquial Chinese from our designer ("OK la") were the norm this month. It's been crazy.

Incidentally, all of Digit's editors seem to have been hit by the curse (or the boon) of premature baldness. Why? This month seems to have hit Sid particularly hard. He got caught between a bad cold, a trip to Vietnam just before the riots (read the news you philistine) and a personal crusade in the middle of the month left him drained and wired at the same time. The result? Our poor assistant editor is now shedding hair like a cat in the middle of summer. It's not doing his illusions of being an LdC (I'm not going to tell you who that is. Unlike you, he knows who's writing this diary) doppelganger any good.

With all these ups-and-downs, we're actually quite amazed that we managed to get the issue out on time (hey, maybe we are supermen after all).

Lastly, before we forget, minions, where art thou? We're in need of some willing slaves. Don't you want to sacrifice yourself to the greater good of mankind?

Dark Souls II

It took a lot of hard work and creativity to come up with a title as atmospheric and hard-hitting as Dark Souls. Can this sequel hold its own with the original?



Anirudh "Mad Zombie" Regidi
feedback@skoar.com

Dark Souls II was a slight disappointment. There! We said it. It's out there now and you've read it and if you're a fan of the original, you're either sagely nodding your head in understanding or are frothing at the mouth in an agitated frenzy. However, do hear us out before crucifying us.

Dark Souls II is the sequel to one of our favourite games of all time and From Software had a LOT to live up to when creating the sequel. Strangely enough, it seems that the heavy responsibility has rattled the team a bit, resulting in a game that takes no risks but just refines the basic formula that made Dark Souls so great. And yes, there was a new team working on Dark Souls II.



At its heart, Dark Souls (and Demon Souls before it) has always been about the rock-solid combat system and gripping gameplay. The difficulty has always been more of a side-effect than a product of intent. That might sound confusing, but what we mean to say is that Dark Souls' difficulty is not contrived, it's a product of the game's design; a difficulty of the type you'd encounter playing minesweeper. The game always expected you to learn from

your mistakes and progress with the strength of your renewed knowledge. Dark Souls II is mostly the same, but the difficulty also does feel contrived at times now, making the game unnecessarily frustrating at times.

Dark Souls II does that very well, the mechanics are still as solid as we remember, the enemies as varied and as murderous, the environments as lovely, if not lovelier, to behold. But here's the catch, it somehow doesn't fit well together. This is a game where everything feels great in isolation, but lacks a cohesive structure for holding everything together. The original was a game with a foreboding atmosphere and a sense of despair and melancholy that hung heavily in the air, you felt weighed down by it. With Dark Souls II you feel like some sort of

Verdict

It's easy to find fault with Dark Souls II but it's hard to blame the team behind it. They've worked really hard to create a great game, but without the direction of its original director, the game lost out on the very charm that made it special.

This still a great game and still one that you shouldn't miss, but only if you've played the original first.

MOAR!

- » **Genre:** Action RPG
- » **Developer:** From Software
- » **Publisher:** Namco Bandai
- » **Price:** ₹3,000 (Steam)

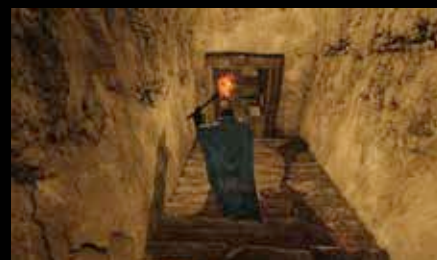


daredevil explorer who's stumbled into the ruins of an ancient world where ghosts of the past still linger (Old Dragonslayer, we're looking at you) and it just feels wrong. The world is too dead.

That's the problem with Dark Souls II, it depends too much on your past memories to make the game seem great. It doesn't have a soul of its own. The game improves on Dark Souls' combat, refines the graphics, tries to tell a better, more interesting story and it does do all of that. However, it does all of the above without that sense of style and without the atmosphere of the previous game. There was a sort of dark dignity to the characters of Dark Souls, a dignity that you still find in many of the bosses in this sequel, but it's a dignity that is missing from the rest of the world. The creatures in Dark

Souls II are just monsters, automatons with no soul of their own, no different from the dozens of nameless beasts you'd find in games like Diablo III.

A game with good mechanics is just a game with good mechanics; it's something that lacks character, a soul. Dark Souls II is a game with great mechanics and thus, a great game; the best we've played this year and we're fairly certain that we'll sink a few hundred hours into this one. But Dark Souls II will never leave as indelible a mark as Dark Souls. That said, Dark Souls II is still such an incredible game that given a choice, we'd pick the sequel over the original any day, but that's only because we've already experienced the joy, the wonder and the despair of the original and once you get past that, it's still the gameplay that counts. *





SKOAR!

SMITE

Smitten!

Thank ye gods!

Prakrit 'The Pony' Dhondiyal

As children, the idea of all-powerful gods was always appealing. One could indulge in hours-long arguments about whether Zeus wipe out the sleepy Kumbhakarna. Can Mercury run circles around the mighty Ra? Who would survive the slugfest of Death – Hades, Thanatos or Osiris? Above all – can Gods from seven different mythologies work together to kick ass? SMITE allows people to put their foot where their mouth is.

At the risk of sounding hipster, we got into SMITE before it became mainstream. Somehow though, after that initial excitement, we got off the innovative MOBA in favour of some other games vying for our attention towards the end of 2012. Why

did it fail to keep us hooked? Was it something inherent? Well the game's come a long way since its beta days. (If you're curious about our 2012 beta review, you can find it in the Empower DVD).

Back in beta, some gods did seem to be over-powered. Ares, for example, had an ultimate that chained everyone and bunched them together, leaving them sitting ducks for anyone with an AoE (Area of Effect) attack to pounce and end it. Ahh the golden age of penta kills in SMITE. But as with all MOBAs, patches try and fix imbalance and eventually excessively powerful gods were nerfed, weak gods have been given their dues and there is a counter for every attack in the game – if you

MOAR

PRICE: FREE

GENRE: MOBA (Massive Online Battle Arena)

DEVELOPERS: Hi-Rez Studios

PUBLISHERS: Hi-Rez Studios

PLATFORM: Microsoft Windows

have the knowledge and experience to make use of it. The game finally started to take shape.

But why would one play SMITE over the other MOBAs? League of Legends has been around for quite a while and DOTA 2 is so popular already. Even Awesomenauts brings in the challenge of playing MOBA in two dimensions. SMITE's USP is the perspective. The third-person perspective puts the player right in the midst of the action. Unlike most other MOBAs, SMITE pulls away from the isometric view of the battle ground, changing the combat experience. The game's perspective makes the gameplay more immersive.

Smite doesn't have a steep learning curve, which is a huge advantage for newer players. The controls are a combination of the keyboard and mouse for both movement and attacks. This makes all the difference to the gamer. SMITE pulls you headlong into the action of the game. You still have three lanes, five opponents and four teammates. But one can get more into the game when fighting the opponent up close. Imagine the perfect mash-up of World of Warcraft and Dota 2 – and you have SMITE.

Despite being a freemium game, Smite doesn't let you pay to win, which is a good thing. Pings to European servers are generally in the 200-350ms range, which is playable at best. Despite a few minor flaws here and there, this is a great game with a thriving community.

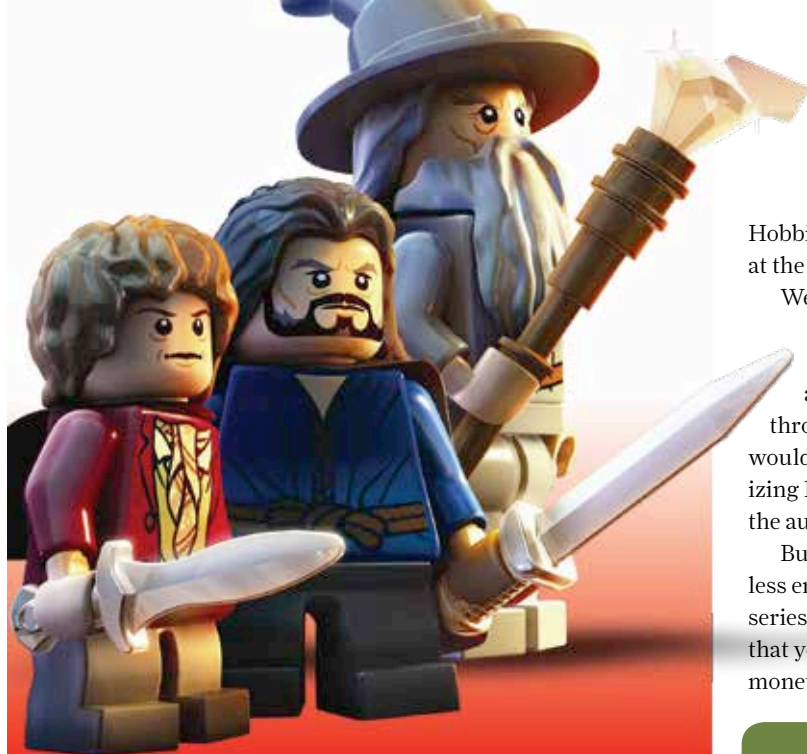
It's high time you jumped on this bandwagon, if you haven't already, go

to <http://dgit.in/webreff> or

<http://dgit.in/statreff> to sign up.

Smite is so much more than this tiny little review. Head over to www.thinkdigit.com for the full story. *





HOBBIT-SIZED ENTERTAINER

SKOAR!

Hobbit movies it's inspired from and you can't help but laugh at the chaotic shenanigans that unfold.

We can't fault the look and feel of the game though. In trademark LEGO style, the designers have done a fabulous job of recreating the magic of Middle-earth, and all the places that Bilbo and the Dwarves visit through the first two movies, as close to perfection as one would imagine. The sampled movie dialogue and mesmerizing Howard Shore score keeps you enthralled and adds to the authenticity of the in-game environment.

But there's too much glitter and little gold. The game is less engaging and feels incomplete. But if you're a fan of the series, by all means add this to your collection, but know that you're not missing out on much. We'd still say that your money is better spent elsewhere. *

MOAR!

Reviewed on a PS3

PRICE: ₹1,999, **Genre:** Action-adventure, RPG

Developer: Traveller's Tales,

Publisher: Warner Bros. Interactive Entertainment

Platform: Windows, PS3, Xbox 360, PS4, Xbox One, etc

by Jayesh "Big Daddy" Shinde

feedback@skoar.com

When this game arrived, we just couldn't wait to have a crack at it, reminiscing all the fun times we had playing LEGO The Lord of the Rings last year. However, the magic of Peter Jackson's or Tolkien's original epic hasn't been ported over to perfection in this game, which is only based on the first two movies of The Hobbit trilogy – the final movie is expected to be out later this year. So first and foremost this game feels incomplete, after all the running around you do in Middle-earth, which is quite pointless if you think of it. Why release a game that doesn't conclude properly? Couldn't they have waited for the movie adaptations to conclude and then launch this game? It just doesn't make any sense.

As far as the game's concerned, it's not as great as the LEGO Lord of the Rings version we had so much fun playing. Where LEGO LotR had enough characters with myriad powers and quests and foul beings to keep you interested at every turn, this LEGO Hobbit version falls flat on all those counts and feels like a large, pointless quest that fails to keep you motivated for too long. Even the level design is way too unpredictable – where some levels finish very quickly, others drag on for far too long, and there never seems a good enough rhythm or tempo to the LEGO Hobbit's gameplay. While Bilbo is easy to spot, since

he's pretty much the only Hobbit in the game, the thirteen dwarves are a haze and a blur, difficult to distinguish and with not enough cool powers to make them engaging enough. That being said, the game successfully provides a humorous and child-like touch to the



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Every month we highlight some aspiring tech writers and their spirited attempt to get published in the magazine. Let's have more!

Communicate like a geek



Praneet Sah

Make phone calls with any number from anywhere with just a PC

Calling someone from the comfort of your PC is convenient, but what if you could pretend to be anyone? What if you could get your friends to call each other without actually calling each other? All this and more can be accomplished by

VOXOX. Do bear in mind that this is only for fun. Don't attempt to do anything illegal, it's very easy to get caught.

VOXOX basically gives you freedom from your phone. Download a suitable version of VOXOX from <http://www.voxox.com/downloads> I'll be using the windows version for this article. You can sign up for an account on VOXOX at <https://signup.voxox.com/> and make sure you verify your account.

Once you've downloaded and installed the program and your account is verified, we can proceed with the fun part.

#1 Making calls from same number to same number.

To achieve this, you need to go to VOXOX's website and then sign in. In your dashboard, check for call-settings and then click on 'My Phones'. Click on "Add New Number". Enter the phone number to which you want to make call from itself. For e.g.: You want to make call from +919876543210 to itself, so enter +919876543210, make sure to put "+91" in the country code (black) field. And then click on 'Save' button. Now open VOXOX's Desktop Application. Login with the same username and password that you just used on the website. Check below in the status bar, you will find something saying 'VOXOX' or maybe 'Mobile' in some cases. Click on it and then choose the number which you just entered on the website. Now locate the Dial pad and enter the same number that you choose below. It should now also appear in the centre, click the 'Call' button in the centre ...et voila! Your call has been made. You can't hear the person at the other end though.

#2 Make calls with any caller ID to anyone.

You need to go the VOXOX's website and look for "Call Settings>Caller ID". On the Caller ID page, you need to enter the fake caller ID as before. I have experimented and have been successful in using IDs ranging from 5 digits to 18 digits (including country code). After that, press the save button and then open your VOXOX Desktop client, in here, check the bottom side and there would be something written as VOXOX or maybe Mobile. Click on that and choose the option, which would look something like "VOXOX (+1.XXX.XXX.XXXX)", make sure to choose the first option only. Now you need to enter the phone number

which you want to call and hit the call button. Your call will be connected to that phone number that you entered in the text field while the caller ID would be the fake one that you entered on website. And yes, you can talk to that person now.

#3 Connecting any two other phone numbers, literally hacking their phones.

Now this is the best trick out there. Imagine getting two friends to call each other from their own phones (seemingly) and having them talk to each other, each believing that the other was the one who called. It would be hilarious. Fire up your browser and navigate to VOXOX's dashboard. Go to Call Settings>My Phones. Click on 'Add New Number' and add any one of your friend's number over there, let's say number of 'x'. Now go to VOXOX's



The VOXOX UI

Desktop Client and then look below for "VOXOX" or maybe "Mobile". Click on it and then select the phone number of 'x' which you have just entered on the website. Now in the dial pad, enter the phone number of another friend, say 'y'. Now click on Call, wait 2-3 seconds and done! Their phones will be connected. There is one more thing that you can do, but you need to be really very quick about it, and for real fun you need to have both the friends next to each other so that they both will freak out. In the "My Phones" section, add both of

your friends' number. Now in the Desktop Client, firstly select the 'x' number and then type number 'y' in dial pad and click call. Now quickly choose the number 'y' from below and type number 'x' in the dial pad and click call. Now wait for a second or so and then check out their expressions.

It's also interesting to note that you'll be getting a valid US number via VOXOX. You'll receive the call on the PC if someone attempts to call. Also, you'll be given \$1 credit on sign-up, and as long as you don't let the balance fall below \$0.01, you can make free calls because the \$1 will be refreshed after a period of time.

Sending mails from any Mail ID

If your friends have ever challenged you to hack their e-mail IDs, here's a way to show them up! Obviously, you don't want to do anything illegal and keyloggers and similar software are too boring to be fun. To be a true geek operating within the confines of the law, you'll need to find something truly unique, maybe



100 years of Leica

Leica celebrated its 100th anniversary with the release of limited edition watches
<http://dgit.in/leica100iris>

The right to be forgotten

Following a EU ruling, Google is receiving requests from criminals to remove links to information about their crimes:
<http://dgit.in/googleforget>

Digit Squad

old-school and something that'll make you look like you actually know something. The best way to look geeky is to use the command prompt and type your way to hackstardom.

Firstly you need to make sure that your telnet feature is turned on. In case you don't know how to turn it on, then go to your Control Panel, search for "Turn Windows Features on or off". Now click on the only result and a popup will appear. Scroll to the middle and there spot, 'Telnet Client' and 'Telnet Server'; now tick both the boxes beside them and then a popup would appear which will take around 2-3 minutes and then Telnet will be activated. In case the boxes were already ticked, then there's nothing to worry about, you may simply close everything.

Start your Command Prompt (CMD), preferably in Administrator mode. Now type 'nslookup' and 2-3 lines would come about your modem. Now type 'set type=mx' and press enter. Now enter the service provider to which you want to send the mail. Now a long, very long list of mail exchange server address would appear. Scroll to the top and under 'Non-authoritative answer' choose the first line; within the first line, copy the address after 'mail exchanger'. Now type 'exit' to quit 'nslookup' and now type 'telnet + your copied address + port number (25)'. You should get something like this "telnet gmail-smtp-in.l.google.com 25"; Go on and press enter. There would be a pause for 1-2 second and then everything on the screen will clear up and a single line on the top would appear. You don't have to do anything with that line. Optional: Type 'ehlo gmail.com' to confirm that you are connected or not, replace 'gmail.com' with the second line that you type in 'nslookup' argument.

Now we'll be framing our lines, where we will tell the mail addresses, subject, and body and finally you'll send it! Before we begin, I'll like to tell you that there are chances that you may encounter some sort of error after any line, so not to worry, just retry that line. There are also chances that you are unable to connect or maybe your mail is not getting sent, this is because of your internet provider and the only solution is to try any other internet connection. This may happen because your ISP doesn't permit it or maybe your IP address is black-listed. Anyways let's get started now. Your first statement will tell the mail address from which you are sending the mail. You can use any mail, just make sure that the domain name exists. The statement will look something like this "mail from:<something@anymail-provider.com>" now press enter and a line would appear with 'OK' written in it, if not then retry. Now we'll specify the address to which we're sending our mail address, this mail provider needs to match with the server to which you are connected to. Remember you specified it in the second line of nslookup, I used 'gmail.com'. Our statement will look something like this "rcpt to:<something@gmail.com>", press enter and then again a statement with 'OK' written in it would appear. Now we will specify the subject and the body. To begin with it, type 'data' and press enter, wait for a second and a

message saying 'Go ahead' would appear. Now type 'Subject:your desired subject' and press enter. Now type your body (message). You may simply press enter for line break. After finishing writing your subject and body, press enter and type '.' (fullstop) and then press enter. Now your mail would be sent. There are chances that the mail may not be sent because of restrictions on unsolicited mails these days. Such mails are generally termed as spam and servers are smart enough to counter them. Therefore, it might not work on services like gmail and outlook.

A quick alternative if you don't want to do all the above is to simply navigate to <http://emkei.cz/> and enter all the required details and send the mail. Well there are chances that your mail will be caught by the Spam filters and will show up in the spam folder, but hey, you just might succeed and it'll be worth it. 🚩

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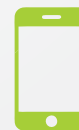
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